B-47 STRATOJET

D & S Vol. 18

PRODUCTION VERSIONS

5 VIEW

in detail & scale

Alwyn T. Lloyd

D&S
VOL. 18
PRODUCT REVISIONS

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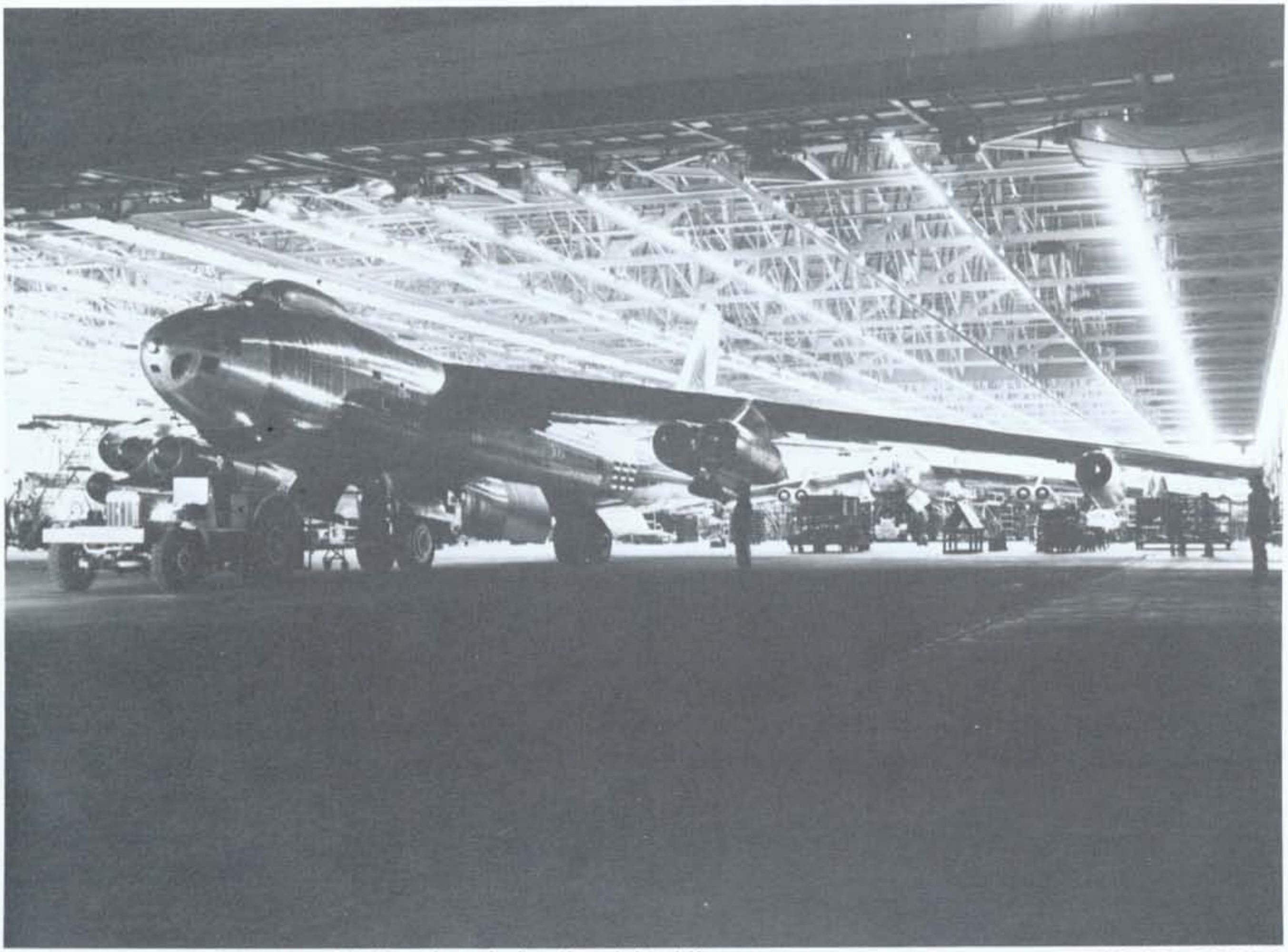
Front Cover: This Lockheed-Built B-47E-50-LM, S/N 52-3363, departed McConnell AFB, KS, on July 17, 1964. It was headed for the boneyard at Davis-Monthan AFB, Arizona, during Project Fly Fast, which phased the B-47s out of SAC's inventory. This aircraft was equipped with Phase II ECM with the antennas located along the aft fuselage. A partial white anti-radiation finish had been applied to the belly of the aircraft. Tom Cusick, Boeing-Wichita photographer, took the picture. (Boeing-Wichita C687)

Back Cover: This panoramic view from the copilot's station reveals the vertical fin, HF antenna, yaw damper Q-spring inlet, and partial white anti-radiation paint under the horizontal stabilizer. This was the copilot's view when he served as the airplane gunner. (King)

INTRODUCTION



B-47Bs roll out of the Boeing-Wichita plant during the night shift. *(USAF *43675AC)*

The Boeing B-47 Stratojet ushered in the jet age for the Strategic Air Command and provided the United States with a quick strike nuclear deterrence. It was the first large aircraft to combine jet propulsion with a swept wing design.

Author Al Lloyd's fourth book in the Detail & Scale Series covers the production versions of the B-47, beginning with the XB-47 prototypes, and progressing through the B-47E, which was the final production version. Differences between each version are explained as well as illustrated with photographs and drawings. Numerous photos, many of which have never been published before, show details of the B-47's main structure, landing gear, engines, interior, offensive and defensive armament, fuel system, RATO units, canopy variations, the Tee Town ECM pods, and much more.

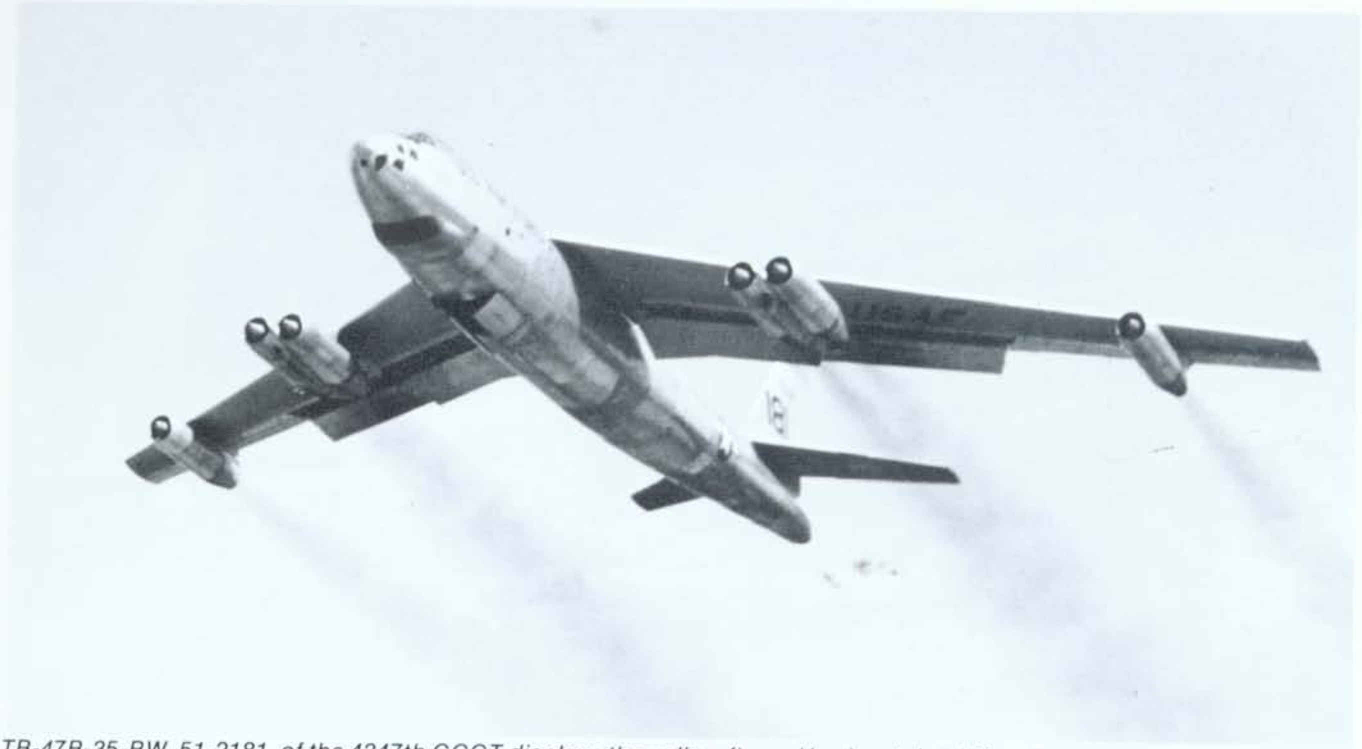
Sure to be an interest to the historian is a complete list of bomb wing assignments for the B-47. A special section shows some of the markings carried by these units. A listing of production blocks and serial numbers is also included.

Beginning with a background history of the Stratojet's development, Lloyd provides a description of the B-47 and its major systems. This is repeated for each production version, explaining the changes and improvements made along the way. The B-47 carried several paint schemes, these being bare metal, silver paint, partial white, and full white anti-radiation paint. These are described and are illustrated in numerous photographs. A reference listing provides the reader with additional sources on the Stratojet.

It is unfortunate that the B-47 has been the subject of but three major kits, and two of these are no longer generally available. No specialty decal sheets have been issued for the one currently available model, but sources for additional decals are listed in the Modeler's Section. Reviews cover each of the three major kits.

A second volume on the B-47 is being considered. It would cover the special purpose variants, to include the RB-47B/E/H/K, EB-47E, WB-47B/E, XB-47D, YDB-47B/E, USN EB-47E, QB-47E, KB-47G, and the Cross Bow and Rascal missile carriers. Unit assignments, antenna configurations, ECM pods, and coverage of the details of these aircraft would be provided. Information on how to convert the Hasegawa B-47 kit into several of these versions would be included in the Modeler's Section. If you would like to see such a volume on these special purpose Stratojets, please let us know. See page 72 for the address to send your request.

STRATOJET BACKGROUND



TB-47B-35-BW, 51-2181, of the 4347th CCCT displays the yellow fin and horizontal stabilizer bands and the large last three digits of the tail number on the fin. *(Williams)*

Four airframe manufacturers entered into a design competition for a jet-propelled bomber which would meet the military characteristics issued on November 17, 1944. These characteristics required a minimum top speed of 500 mph (434 knots), a tactical operating altitude of 35,000 to 40,000 feet, a 2,500 to 3,500 statute (2,171 to 3,039 nautical) mile range, a takeoff, without assistance devices, over a 50-foot obstacle on a 5,000 to 6,500 foot runway, and a capability of bombing land and naval targets. Defensive armament would consist of either a nose or a tail turret containing a .50 caliber gun. The offensive armament would be up to 16 x 500 pound bombs carried internally, or alternate loads made up of 1,000, 2,000, and 4,000 pound bombs.

In contention for this new bomber were the B-45, XB-46, and XB-48. The characteristics for each of these aircraft are compared with those of the B-47 in the chart on the next page.

During its engineering development, the B-47 went through twelve major design studies. Various engine, wing, tail, and landing gear combinations were evaluated. Early configurations were based on four-engine propulsion. The Model 450-1-1 had a pair of nacelles on each wing -- the tip-mounted nacelles were to assist in wing flexing.

After two and one-half years of negotiations between Boeing and the Air Force, definitive fixed-price contract W33-038-AC-8429 was approved on July 10, 1947, calling for two stripped XB-47s, spare parts, mock-ups of the complete airplane and the complete fuselage, wind tunnel tests, and data. The total contract cost was $9,668,483.52. Production of the two aircraft and mock-ups occurred at Boeing's Plant 2 in Seattle, Washington, adjacent to Boeing Field.

Just forty years after the Wright Brothers' first flight, the first XB-47 took to the air on December 17, 1947. Boeing test pilots Bob Robbins and Scott Osler were at the controls for the fifty-two minute, 150-mile flight to Moses Lake AFB, Washington. Minor flight squawks, including false engine fire warnings, were corrected and a second flight lasting one hour and two minutes was made on December 20, 1947.

Between December 17, 1947, and January 9, 1948, the Stratojet flew twenty-nine times accruing eight hours and sixteen minutes in the air. Takeoff and landing characteristics, approach angles, and stability evaluations proved satisfactory. By April 13, 1948, Phase I tests totaling thirty-six hours and thirty-eight minutes were completed. On July 21, 1948, the second XB-47 made its maiden flight.

By July 1948 there was still no production contract for the B-47. Major General K. B. Wolfe, Director of Procurement & Industrial Planning (and of the B-29 "Battle of Kansas" fame), along with General Joseph McNarney, Air Materiel Command commander, came to Seattle in a VB-17 in order to discuss the status of the B-50 production program. Boeing President William Allen wanted to show off the B-47. He convinced the generals to leave their B-17 in Seattle for another crew to ferry, and they took a B-50 to Moses Lake. There they viewed the XB-47.

Lieutenant Colonel H. E. "Pete" Warden, Chief of the Engineering Division for the Bomber Branch at Air Materiel Command, convinced MG Wolfe to go for a ride in the

COMPETITIVE AIRCRAFT

Manufacturer/ Type	No. Built (All Models)	Span	Length	Height	Gross Wt. (Pounds)	Service Ceiling	Cruise/Top Speed (MPH)	Engines (Number)	Static Thrust	Range (Miles)	Bomb Load (Pounds)
North American B-45	149 (a)	96'	75'4"	25'2"	82,600	43,200	458/580	J47-GE-9 (4)	5,200	2,610	22,000
Convair XB-46	1	113'	105'9"	27'11"	91,000	43,000	439/545	J35-A-C3 (4)	4,000	-	22,000
Boeing B-47	2029 (b)	116'	109'10"	27'11"	185,000	41,750	495/630	J47-GE-25 (6)	6,000	3,000	20,000
Martin XB-48	2	108'4"	85'8"	26'6"	102,600	43,000	-/495	J35-A-5 (6)	4,000	2,600	20,000

(a) Including 33 RB-45Cs
(b) Including 290 RB-47Es and RB-47Hs

XB-47 with Major Guy Townsend, XB-47 test pilot. Meanwhile, General McNarney, LTC Warden, and Mr. Allen went to the control tower to watch. Townsend and Wolfe put the airplane through its paces. The General was impressed with his flight. His enthusiasm was quite evident during the post-flight discussion. Major Townsend then took the plane back up, making RATO takeoff, and pressed the bird to its limits. It was undoubtably this demonstration which led MG Wolfe to work towards a production contract.

Proving the Stratojet

When funding became available, the airplane was literally thrown into production. Airframes were built while testing was being accomplished. Test findings resulted in design changes which in turn resulted in modification programs. New ground was being plowed with regard to the technology. The USAF had taken a major step in order to modernize its equipment during the "Cold War" years. Some of the testing projects were:

- Project WIBAC - a service proving program at Boeing-Wichita established in July 1950
- Project Eager Beaver - testing of the B-36 tail armament system on the B-47
- Project Reliable - proving of the computerized "K" bombing/navigational system
- Project Hornet - testing of the prototype A-2 fire control system on the B-47As
- Project Greenhouse - participation by one XB-47 in the 1951 A-bomb tests at Eniwetok Atoll
- Project Snow Time - special storage program developed to assure complete logistical support to units receiving the B-47
- Project Skytry - full-scale simulated combat tests conducted by one squadron of B-47s

Debugging this new-technology aircraft took 3,096 hours of wind tunnel time and five years of flying. Experience gained from the jet fighters of the day was just not enough to fully understand the intricacies of a jet bomber. By June 1953, B-47s had logged 5,000 hours of testing and 50,000 hours of operational flying. Only then was confidence such that the entire 306th BW, under Colonel M. N. W. McCoy, deployed from MacDill AFB, Florida, to Fairford Air Base in England. Several speed records were set and broken during this deployment.

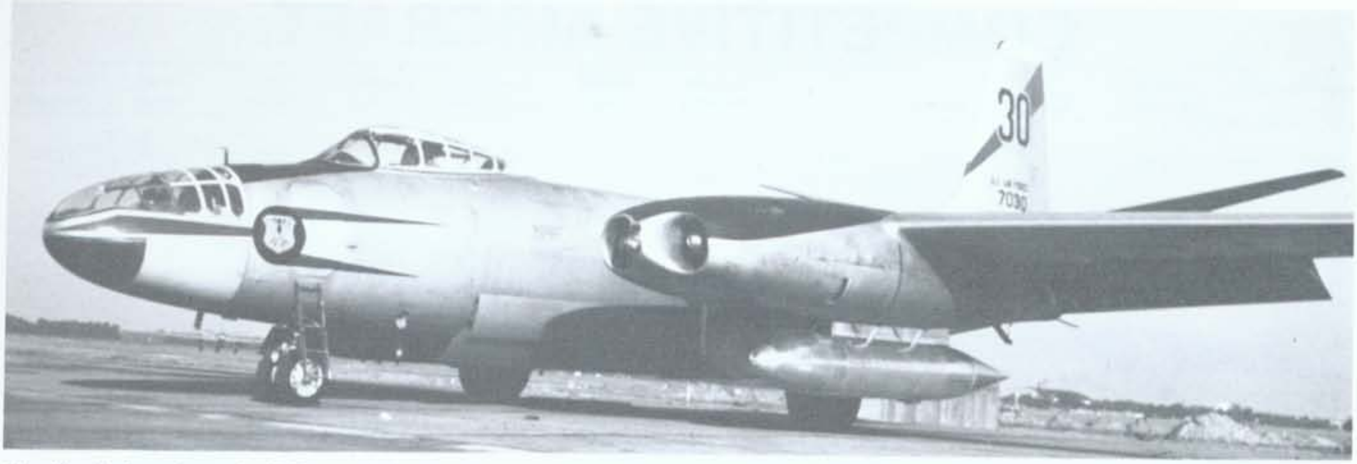
Lessons learned in testing and service evaluation resulted in a number of modifications. The major ones are listed below:

- Baby Grand - January 1953 program conducted at WIBAC to install the A-5 fire control system

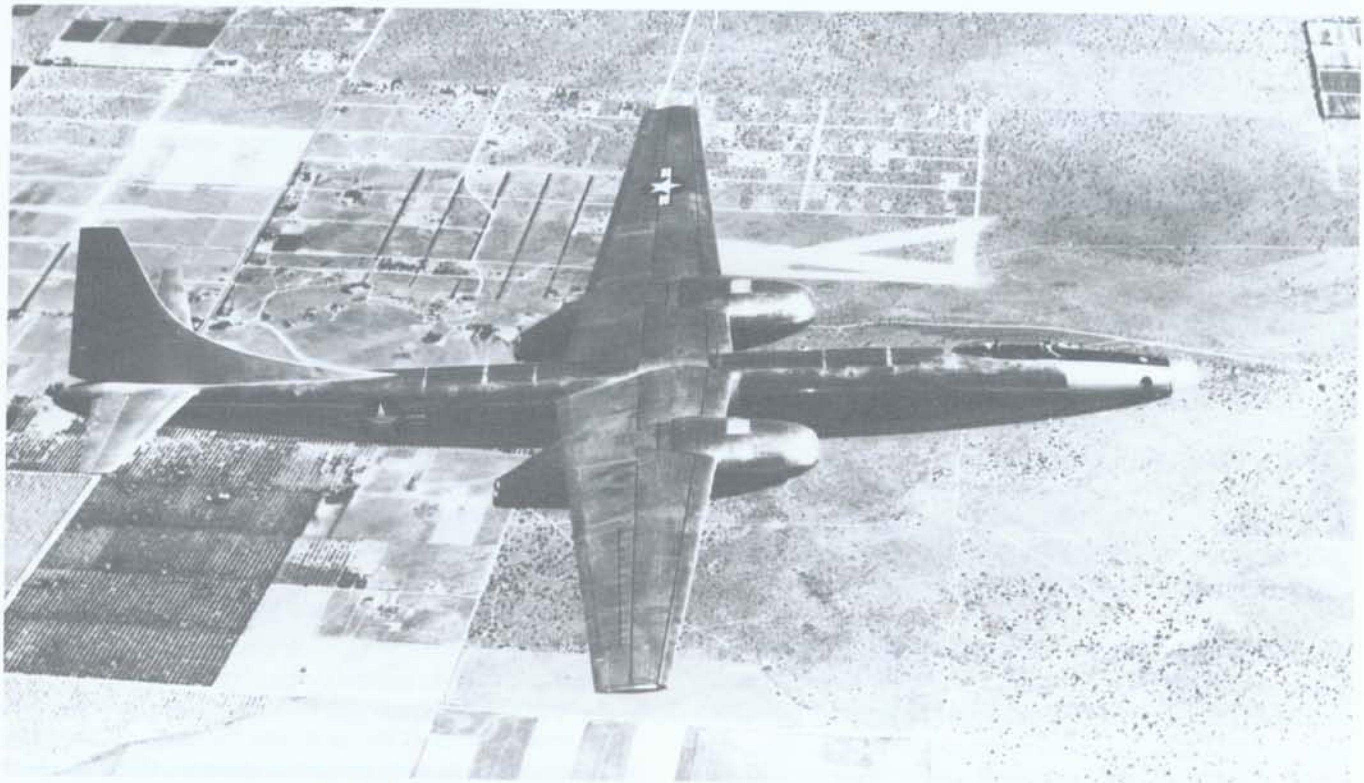
- Field Goal - January 1953 Douglas-Tulsa program to convert B-47Bs into TB-47Bs

- Turnaround - WIBAC 1953 program to turnaround completed airplane units 617 through 730 to make them conform to unit 731 standards. Modifications included addition of ejection seats, external thirty-three RATO system, rework of bomb/nav system, reinforced landing gear, installation of in-flight refueling equipment, and addition of the approach chute.

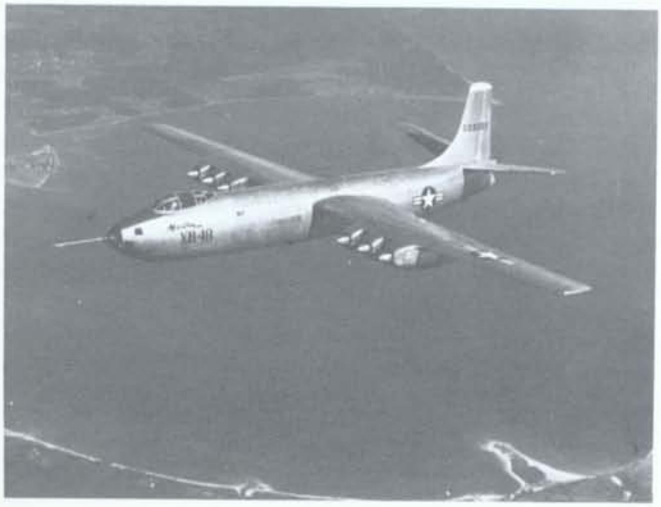
- High Noon - a 1954-1955 program to bring 165 in-service B-47Bs up to the Turnaround program standard. In addition to the standard IRAN (inspect and repair as necessary), the following modifications were accomplished:
  - Added Weber upward ejection seats for pilots and Stanley downward ejection seat for the observer
  - Increased fuel capacity and structural strengthening
  - Replaced J47-GE-23 engines with J47-GE-25 engines, and added a water alcohol injection system
  - Increased bomb bay capacity for general purpose bombs, and to support a single sling for thermonuclear weapons
  - Added Phase III ECM
  - Added AN/ARC-21X long range liaison radio for plane-to-ground communication



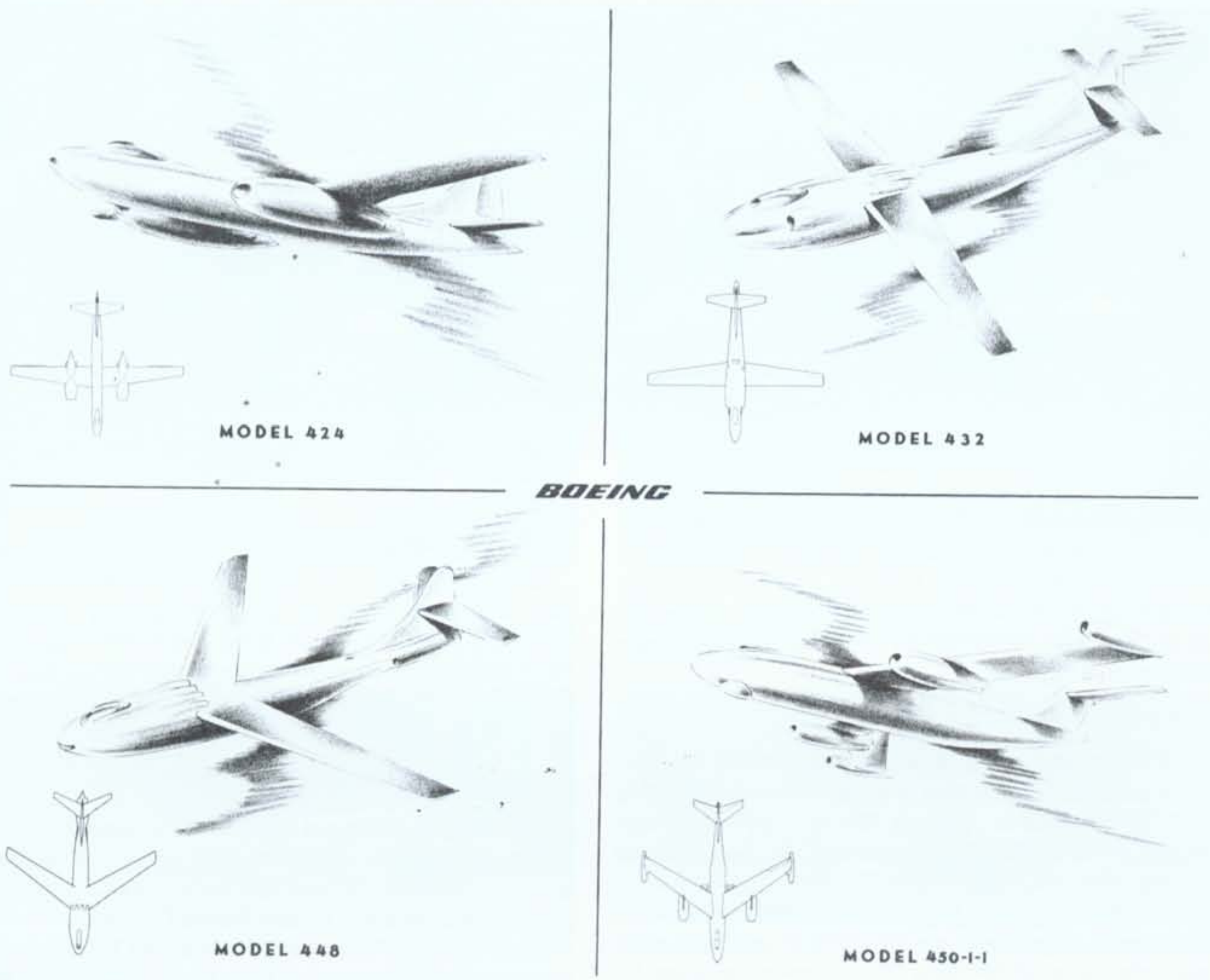
The North American B-45 Tornado lost out as a strategic bomber but became a viable tactical bomber and reconnaissance aircraft for the USAF. This B-45A was operated by the 47th Tactical Bombardment Squadron. *(USAF K6648)*



This sleek four-engined Convair XB-46 never made it beyond the flight test stage. *(General Dynamics)*



The Martin XB-48 was a six-engined prototype bomber. Using lessons learned from the Martin B-26 "Middle River Stump Jumper", this was the first US aircraft specifically designed to have a bicycle landing gear system.
(Martin Marietta)



Four of the engineering design study airplanes leading to the B-47. *(Boeing 112505)*

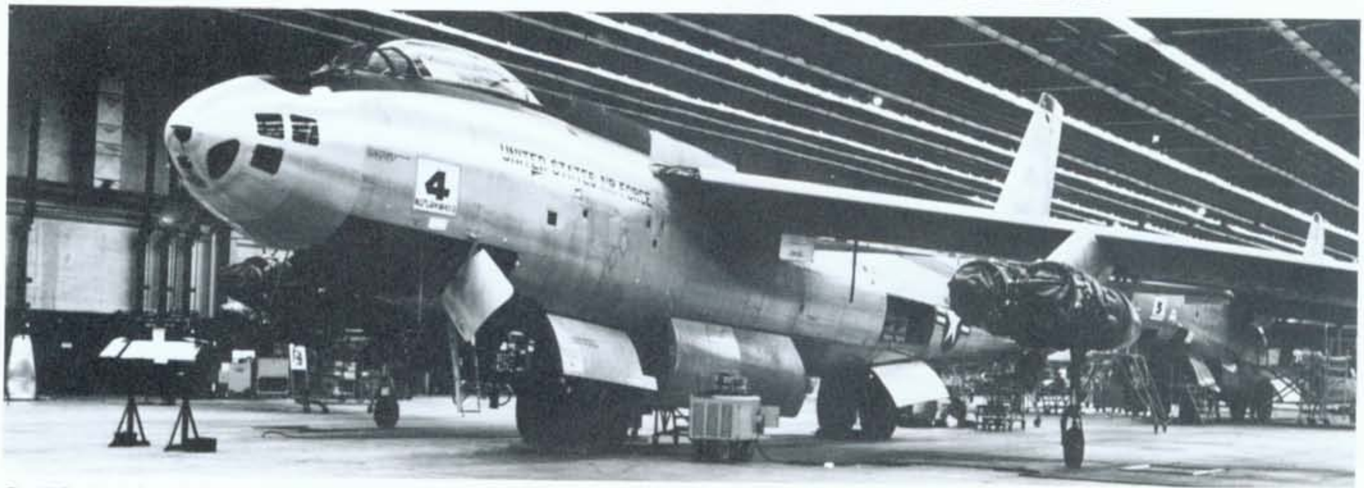
  - Installed A-5 fire control system on all but last 14 airplanes which received the newer MD-4 system
  - Incorporated Project Reliable K system improvements
  - Added approach chute
- Ebb Tide - upgrading of airplane units 1 through 234 as follows:
  - Similar to High Noon for sixty-six units in the 135 through 254 block
  - 108 airplanes in block 1 through 134 modified for Air Training Command. Similar to bombers less defensive armament, ECM, bomb drop provisions, aerial refueling capability, range augmentation, water injection, or ATO. Became TB-47Bs.
  - Thirty airplanes were modified to the DB-47 configuration
- Peach State - Lockheed-Georgia IRAN program in 1954
- Oil Town - Douglas-Tulsa IRAN program in 1954

The B-47 was rushed into production and service to meet the "Cold War" requirements of the USAF. While the B-47 was a learning tool for jet bomber operations, it also was an interim bomber until the B-52 could be placed into service. The B-47s were flown extensively on Reflex deployments to England and Sidi Slamane during the 1950s.

During June of 1960, SAC began testing a B-47 dispersal program in which the aircraft were operated out of civilian airfields in times of crises. This dispersal would shorten reaction time and insure survivability of the force. The most memorable of these dispersals occurred during the Cuban Missile Crisis.

Phaseout of the B-47 began in 1961 with the loss of six bomb wings. Robert Strange McNamara, then the Secretary of Defense, directed that greater emphasis be placed on strategic missile systems, and more B-47s were phased out of service. Initially, a June 1966 deadline for complete B-47 phase-out had been established. During Project Fast Fly, the remaining five B-47 wings were phased out six months earlier during the last half of 1965.

THE B-47 DESCRIBED



B-47B-30-BW, s/n 51-2118, on the modification line at OCAMA. Production number and the work order numbers appear on the nose placard. *(USAF/OCAMA)*

Throughout its production life the basic appearance of the B-47 remained the same. However, numerous structural and systems refinements were incorporated in the production line and retrofitted in the fleet through major modification programs.

Structures:

The design technology explored with the B-47 had previously been confined to that of experimental aircraft. The swept wing required for the 600 mph-class bomber obviated all previous design techniques. Temperature ranges of 120° F to -65° F were required. The necessary fuel weighed more than a fully loaded, combat-ready B-17. Aerodynamic smoothness was very critical -- scuffed upper wing surfaces could decrease the airplane's top speed by as much as 20 mph.

Fuselage:

A semi-monocoque fuselage with four longerons and closely spaced frames was employed. For additional bending strength, two short longerons under each wing cutout and walkway members above the upper longerons were used. Stressed body skin between the longerons acted as beam chords. Circumferential frames and bulkheads were spaced at about nine inch intervals. The inhabited area in the forward crew compartment and the ECM platform in the bomb bay (some aircraft) were designed for up to a 6.55 psi pressure differential between the atmosphere and the crew areas.

The nose section began as a circle in form. As the sections progressed aft, equipment space requirements resulted in the depth being increased to a maximum of 10' 8.3" with a width of 9' 7". In order to maintain a proportional radius, the fuselage sides were flattened for a short distance aft before becoming circular again.

The pressurized nose section housed the navigator-bombardier-radio operator, radar and bombing equipment, in-flight refueling inlet line, tandem pilots' stations, and crew passageway. The radome was located outside the pressurized area beneath the fuselage.

Because the high speed wing required a thin airfoil, little room was available for the fuel. Consequently, all internal fuel was carried in body fuel tanks. For similar reasons, the main landing gear was also housed within the fuselage. The aft fuselage housed radio and radar equipment, batteries, cameras, drag chute, and the defensive armament.

Wing:

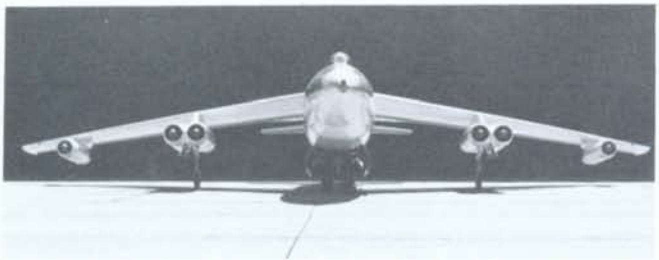
The wing had a pair of spars with a stressed skin which was constructed in one piece. This thin airfoil-sectioned wing was swept to 35 degrees at the mean aerodynamic chord (MAC), and had a heavy tapered (milled) skin on the inboard portion. Four taper pins attached the wing to the fuselage and transmitted all body loads to the wings. Body bulkheads at Stations 425 and 515.5 had receptacles for these taper pins. These pins became the subject of a major modification program known as Milkbottle.

The double skin on the wing leading edge housed a duct which directed hot air for wing anti-icing.

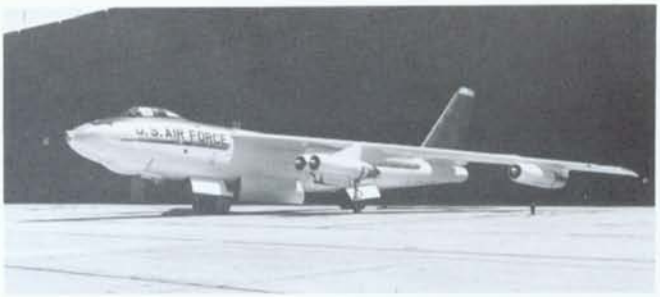
Flight controls were attached to the aft wing spar. Fowler flaps were employed inboard while modified Fowler flaps were used as outboard flaperons. When the flaps were extended, the outboard flap operated proportionally in conjunction with the ailerons. The ailerons were located outboard on the wing, straddling the outboard engine. Removeable tips, access doors, and leading edges comprised the remainder of the wing.

Empennage:

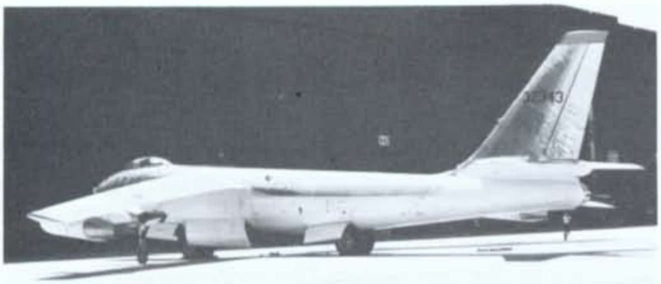
Both the horizontal stabilizer and vertical fin were essentially of monospar stressed-skin construction without span stiffeners. The vertical fin had a cutout for the horizontal stabilizer and an auxiliary spar in the lower portion to carry the torsional stresses. A heated leading edge was provided for both stabilizers. The fin tip was made from laminated fiberglass to provide a fairing for the omni-range antenna.



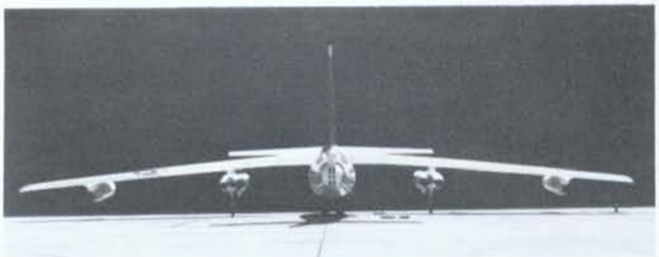
Front view: The negative dihedral is evident in this view. Compare this wing droop with the wing flexure shown on the XB-47 on page 15. *(Boeing P15477)*



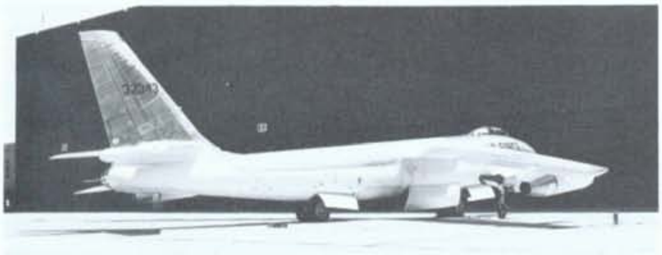
Left front view: The aircraft is finished with the full white anti-radiation paint scheme. *(Boeing P15478)*



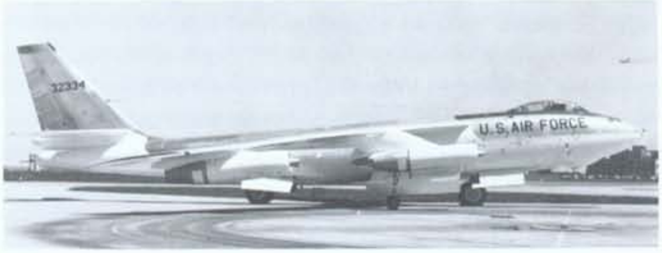
Left rear view: Note the absence of the national insignia at the waist. *(Boeing P15476)*



Rear view: The stabilizers are set at 90 degrees. Note that the engine struts are 90 degrees to the wings. *(Boeing P15479)*



Right rear view: This aircraft is fitted with Phase II ECM wing tip antennas. *(Boeing P15475)*



Right side view: *(Boeing BW92881)*

Flight Controls:

The primary flight controls, ailerons, flaperons (when flaps are extended), elevator, and rudder were cable actuated and hydraulically boosted. When power boosted, all airloads were transmitted to the airplane structure and an artificial feel system provided control feedback to the pilots. In the event of the loss of hydraulic power to the control surfaces, the hydraulic system was locked out and control was by manual input directly through the cable system (manual reversion).

Each of the primary control surfaces had an aerodynamic balance feature incorporated to aid the pilots in overcoming high loads on the control surfaces under all flight conditions. In addition, trim tabs were incorporated into the primary flight controls.

Artificial feel for the aileron was provided by a torsional centering spring located in the left aileron control linkage. The elevator and rudder utilized a "Q-spring" artificial feel mechanism. A separate system served each control surface. A bellows assembly, the Q-spring, was expanded by air taken in at an inlet located at the base of the fin leading edge. The ram air force then acted through a cable system and "Q" tab linkage to oppose the movement of the control surface torque tube induced by the pilot. The resulting pilot-perceived control force was proportional to the control surface deflection and the indicated air speed (ram pressure). Mathematically, with boosted power control, the Q-spring provided artificial control feel proportional to the square of the indicated air speed.

The flaperon provided additional lateral control at low air speeds when the flaps were fully extended to thirty-five degrees. When the aileron movement exceeded five degrees, plus or minus one degree, there was a proportional flaperon deflection. The total flaperon deflection range was twenty-five degrees, plus or minus three degrees, in conjunction with aileron movement.

Hydraulic Systems:

Both a main and an emergency hydraulic system were employed on the B-47. In addition, there were several utility systems receiving power from the two primary systems. Two engine-driven hydraulic pumps, located on the No. 3 and No. 4 engines, pressurized the main system in order to operate the ailerons, canopy, brakes, steering, air refueling slipway door, and bomb bay door systems. An electric motor-pump, located in the forward wheel well, powered the emergency system. The emergency system was a backup to the main system, and provided hydraulic power to all systems except the ailerons. Emergency hydraulic power packages in the wing provided back-up pressure for the ailerons. A separate rudder/elevator hydraulic system was located in the aft fuselage. An emergency system provided power only to the elevator.

Electrical System:

The electrical system on the B-47 received power from a 28-volt direct current (dc) system, a 115-volt regulated frequency (400 cycle) alternating current (ac) system, a 115-volt variable or unregulated frequency ac system, and an instrument inverter system.

DC power was supplied by six Jack and Heintz-design, 28-volt, 400-ampere engine-mounted starter-generators. Those units were used as starter motors to crank the engines up to about nine percent rpm; and then, with the aid of combustion, to accelerate the engines up to twenty to twenty-five percent rpm. At that speed, the starter system automatically dropped out, and the starter-generator thereafter operated only as a generator. A pair of K-1 twelve-volt, thirty-four ampere per hour high rate discharge batteries, connected in series, provided a twenty-four-volt battery power source. These batteries were used to stabilize the dc bus voltage, and to furnish power for limited emergency operations. Also, the batteries could be used to start the engines when external power was not available. The batteries were located in the tail section of the aircraft.

Three 2500 volt-ampere inverters provided regulated frequency 400-cycle, 115-volt, single phase ac current. Two of these inverters provided power to the main and secondary buses while a third inverter served as a spare. A pair of 8000 volt-ampere engine-driven alternators provided unregulated frequency, 380-to-795 cycles, 115-volt single phase ac power. Instrument power was provided by three-phase 400-cycle, 115-volt ac power from two 500 volt-ampere inverters.

Exterior Lighting:

As with most aircraft, the B-47 was equipped with the standard red (left), green (right), and white (tail) navigation lights. In addition, a yellow (lower tail) light was installed. A fuselage lighting system allowed the pilot to signal other aircraft. These white lights were located along the top centerline of the fuselage at Station 879 and on the bottom of the airplane just behind the aft wheel well. The landing lights were located in the inboard nacelles between the engines. A taxi light was mounted on the forward landing gear strut.

The in-flight refueling light system consisted of a pair of wing leading edge illumination lights located in the fuselage, two navigator's window lights mounted in the nose, a pair of receptacle lights within the refueling receptacle, and a door light in the receptacle door. (See page 57.)

Anti-Icing System:

An anti-icing system, utilizing hot engine bleed air, was used to prevent icing of the wings, empennage, nacelles, nacelle struts, and the air refueling door. The ducts ran from the engines, up the struts, along the wing leading edges, down the fuselage sides, aft along the lower sides of the bomb bay, up aft of the rear wheel well, along the top of the fuselage, and along the leading edges of the vertical fin and horizontal stabilizers. In addition, a duct ran forward under the crew compartment to the refueling receptacle.

In early 1962, a series of B-47 losses led to an investigation of the anti-icing system. It was learned that the system had deteriorated due to fatigue, corrosion, chaffing, and mechanical defects in the ducting. The system had deteriorated below a reasonable confidence level. A two-phase improvement program was initiated. The first phase was to block the ducts in the body fuel tank area because of the explosive environment created by the proximity of the hot air ducts to the fuel vapors. The second phase called for replacement of all of the high-pressure hot air ducts in the wing leading edges. Subsequently it was determined that neither the wing nor the empennage anti-icing capability was required, and all ducts to these areas were blocked.

Liquid Oxygen System:

A 305 psi high-pressure-type liquid oxygen system supplied breathing oxygen to the crew members through pressure diluter demand regulators. Two or three Type A-2, 8-liter converters stored the liquid oxygen and converted the liquid to a gas as required in order to meet crew needs. A diluter demand regulator was located at each crew position. In addition, portable A-1 or MA-1 oxygen units were available to meet crew walkaround requirements. The portable units were refillable at recharging stations.

Air Conditioning and Pressurization System:

Crew comfort was afforded by automatically controlling the temperature and pressure within the crew compartment. The air conditioning system consisted of a temperature conditioning system which provided cabin air temperature regulation, a ventilation system which controlled total airflow through the cabin, thereby ensuring adequate ventilation, and a water separation system which controlled humidity. Input air for the system was provided by 12th stage compressor bleed air from the Numbers 1, 2, and 3 engines.

Fuel System:

The fuel system was designed for use with either jet engine fuels or aromatic fuel. The fuel supply system consisted of three main and three auxiliary tanks located within the fuselage, and a pair of external auxiliary wing drop tanks. The body fuel tanks were self-sealing bladder cells held in place with lacing. Body fuel cells could be removed through access holes throughout the fuselage.

Each main tank supplied fuel to a specific pair of engines, however any tank could feed any engine through the crossfeed system. Normally, the forward main tank fed the No. 1 and No. 6 engines, the center tank supplied the No. 2 and No. 5 engines, and the aft tank fed the No. 3 and No. 4 engines.

The wing tanks could be jettisoned when full or empty. However, when full, the wing flaps had to be down. When empty, the tanks could be jettisoned up to the maximum indicated airspeed of 300 knots at 30,000 feet. A parachute system in the aft end of the tank would pull the tank aft to release the strut attachments and allow the tank and struts to depart the aircraft.

A single-point refueling receptacle was located on the forward right side of the aft wheel well. It permitted expedited refueling of all tanks at a rate of 600 gallons per minute, and a defueling rate of 150 gallons per minute.

Through use of the in-flight refueling system, a boom-type tanker could refuel the B-47 at the rate of 600 gallons per minute. While the boom operator controlled the fuel pressure, the copilot of the receiver would control the flow of fuel within the B-47. The B-47 pilot held the bomber in position for the refueling operation. After disconnect, carbon dioxide was automatically discharged into the receptacle and slipway area, and a drain pump drained the residual fuel from the manifold into the forward main tank. (See page 41.)

Fuel Tank Capacities

Tank	Gallons
Forward Main	2,944.1
Center Main	2,835.6
Aft Main	3,427.9
Forward Auxiliary	988.8
Bomb Bay	3,400.0
ATO	558.0
Drop	3,400.0
	17,554.4

Approach and Brake Chute Systems:

The aerodynamic cleanliness of the B-47 led to high approach and landing speeds. Early in the program, a pair of parachute systems were developed in order to improve the approach and landing characteristics of the airplane. An electrically operated approach chute was deployed while the airplane was in flight to increase the angle of approach and provide a greater variation in landing speeds. When the airplane wheels made contact with the ground, the brake chute was mechanically deployed to decrease speed, resulting in reduced tire wear and increased safety under adverse runway conditions. The brake chute was most effective at the higher speeds during the initial landing rollout when the wheel brakes were least effective. Either pilot could deploy or jettison the brake and approach chutes.

The approach chute was a sixteen foot ring-slot type parachute with a thirty or thirty-six inch pilot chute. The approach chute was packed in a deployment bag and installed in a container located on the left side of the fuselage above the tail compartment access door. Guarded switches at the pilots' stations actuated the deploy door, which closed over the chute compartment. The drag (deceleration) chute was a thirty-two foot ribbon-type parachute stowed in a compartment in the bottom of the aft fuselage. (See page 27.)

Landing Gear:

The B-47 was equipped with a tandem bicycle-type landing gear system and a pair of outrigger gear for lateral stabilization. All gear retracted in the forward direction. Both main gear were similar except for dimensions, ground angle, strength, and the steering feature in the forward gear. The shock struts could absorb up to a twelve inch stroke. They were cantilevered in the lateral direction, and supported by a drag strut and link in the fore and aft directions. A pair of fifty-six inch diameter tires were mounted on the dual axles of each strut. Goodrich designed and built the wheels and brakes. During retraction, the gear pivoted about a trunnion at the top of the strut. The drag strut and link were pinned to form a knee joint at which juncture the retraction actuator was attached. The rear gear strut was manufactured by the Cleveland Pneumatic Tool Company, while the forward strut was made by the Bendix Aviation Corporation. From the B-47B and subsequent, a taxi light was mounted on the outer cylinder of the forward strut.

During gear retraction, an electric motor would drive a ball-screw actuator. Locks would hold the screw fixed at either end of its travel, thereby locking the gear in either the extended or retracted position. The placarded airspeed limits for gear operation were 305 knots (350 mph) for extension, and 215 knots (250 mph) for retraction.

The forward gear was hydraulically steerable for ground handling and taxiing. Control was through the rudder pedals. During takeoff and landing, steering travel was limited to twelve degrees (six degrees to either side of center). When the TOW mode was selected, the gear could travel through 120 degrees. Red index marks on the forward gear doors showed the limit of gear travel. The steering system provided gear shimmy protection.

The outrigger gear struts had a twenty-four inch stroke. Each strut was equipped with a 26 x 6.6 inch tire. A shimmy damper was incorporated into each strut. The gear could caster twenty-eight degrees inboard and ninety-three degrees outboard with the torsion links connected. For towing operations, the torsion links could be disconnected in order to permit the outrigger gear to caster freely. The struts were designed to tolerate a maximum of seven degrees of wing droop.

With airplane gross weights ranging between 80,000 pounds to 185,000 pounds, the main gear tires would be pressurized between 77 psi and 179 psi accordingly. If the airplane gross weight was under 150,000 pounds the outrigger gear tires would be pressurized to 150 psi. For higher gross weights, the outrigger tires would be pressurized to 180 psi. (See page 27.)

Pitot Static System:

One pitot mast was installed on each side of the fuselage below the pilots' stations. A total of eight static ports, mounted singly and in pairs, were located in the circular area between the wing leading edge and the rear limit of the canopy. A red border stripe surrounded the static ports. From these pitot static ports, inputs were used for the airspeed indicators, altimeters, cabin pressurization system, autopilot, radar fire control, and the bombing navigation systems.

Cameras:

Provisions were made in the aft fuselage to house a variety of aerial cameras. These cameras could be used independently for photo reconnaissance or automatically through the bombing system for bomb spotting. The navigator controlled the camera operation. Automatic vacuum and heating systems were provided for the camera. Ram air, ducted from the fin leading edge, was used for defrosting the camera window. Any of the following cameras could be installed:
B-47A: K-17, K-19B, K-22, K-24
B-47B: K-17C, K-22A, K-37, K-38
TB-47B: K-17C, K-22A, K-38
B-47E: K-17C, K-22A, K-38

A summary of the camera configurations follows:
K-17: 6", 12", or 24" lens cone
K-19: Automatic night camera
K-22: 6", 24", 36", or 40" lens cone
K-24: Orientation camera
K-37: Night camera
K-38: 36" lens cone
(See page 51.)

Engines:

B-47s were powered by six J47 axial-flow turbojet engines. Each engine was thirty-nine inches in diameter, 144 inches long (cold) or 145 inches (hot), and weighed approximately 2,552 pounds. The engines were supported within the cowls by a pair of supports. The forward support was a semicircular saddle frame, while the aft mount had a single attach point capable of compensating for the thermal expansion of the engine.

To eliminate the induced drag caused by a windmilling engine, nacelle close-off doors were designed for the B-47. When closed, the doors formed the frustum of a right circular cone. With the doors closed, engine windmilling was reduced to about four percent due to incomplete sealing. This feature saved bearing wear on a shut down engine, and prevented severe vibration which might accompany the failure of engine internal parts. (See pages 42 and 43.)

Assisted Takeoff (ATO) Systems:

From the outset, the B-47 was conceived to be equipped with a self-contained liquid rocket propellant RATO system. Between 1949 and 1953, Boeing and the USAF worked with Aerojet General and W. M. Kellog in order to develop such a system. The system would have had two 10,000-pound thrust liquid rocket engines burning a combination of nitric acid and JP-3 fuel. Each rocket engine had a pair of nozzles which were mounted behind hydraulically-actuated pop-out panels located above the aft wheel well. Initial tests on a B-29, using red fuming nitric acid, revealed that the fuel was too explosive for use in normal operations. For use on the B-47, white fuming nitric acid, with JP-3 fuel used for ignition, was tested. The burn time was one minute in duration. A pair of stainless steel tanks was installed in the aft body of the B-47. Special sealant was required to prevent leakage of the highly corrosive and explosive fuel. Flexible lines connected the tanks with the rocket engines. The ignition sequence was programmed in milliseconds by a series of switches. If the rockets did not ignite, the system became a bomb, and a test stand was destroyed on one occasion when the rocket would not ignite as planned. Though tested, the system never became operational due to production problems. (See page 44.)

The internal ATO bottles were installed in panels adjacent to the aft wheel well with nine bottles per side. Aerojet 14AS-1000D4, 15KS-1000, 14DS-1000 rocket engines reached eighty percent of their maximum thrust within one-half second after ignition. The exhaust gases were in the form of a non-toxic white cloud of non-corrosive smoke which was blown clear of the airplane. This eliminated the need for special insulation near the rocket muzzle.

Subsequently, an externally-mounted system was devised. The external racks were either of the "horsecollar" or "split" configuration. These racks were essentially interchangeable. The horsecollar rack utilized up to thirty-three rocket bottles, while the split rack held a maximum of thirty bottles. Use of the externally-mounted system necessitated the establishment of rack drop zones at the end of the runway. To prevent damage to the aft fuselage, rack dropping was restricted to speeds under 195 knots. Initially, the Aerojet 14AS-1000 rocket bottles were used. However, in 1954, these units were considered to be obsolete because of their smoking qualities. Aerojet 14DS-1000 and 15KS-1000 units were substituted. The burn time on the rockets was approximately fourteen seconds. These rockets could be fired simultaneously or selectively. Initially, it was found better to fire the rockets in steps for two reasons. First, if all bottles were fired simultaneously, the heat generated had an adverse affect on the airplane skin. Second, and more importantly, it was learned that the 32,500 pounds of generated thrust stopped instantly when the fuel was exhausted and the airplane climb rate was drastically affected. Hence,

B-47E-25-DTs undergoing final systems checkout at Douglas-Tulsa. Awnings over the canopies help shield workers from the summer sun. Production line numbers appear on the aircraft noses. *(Douglas-Tulsa T-18275)*

the rockets were fired in two phases. Later tests at Edwards AFB led to the simultaneous firing of all rockets, the philosophy being that a maximum climb rate could be established during the most critical phase of the takeoff. (See page 45.)

Defensive Armament:

Though provisions were made for .50 caliber machine guns, no armament was carried on either the XB-47 or B-47As. Plans had called for the Emerson A-2 fire control system and a pair of machine guns to be installed on the B-47As.

As an interim, B-47Bs were equipped with the B-4 system, incorporating a tail warning radar. The guns were not radar controlled, therefore all the copilot could do was generate some harassing fire. The .50 caliber machine guns each had a supply of 600 rounds of ammunition.

With the first B-47E came the greatly improved A-5 fire control system developed by the Crosley Corporation and General Electric. The A-5 system had a gun laying radar and two M24A1 20mm cannon, each with 350 rounds. The A-5 fire control system was retrofitted on B-47Bs during the High Noon modification program. Subsequently, in August 1953, the 938th B-47 was delivered with an improved A-5 system known as the MD-4. The MD-4 had improved copilot's gun control and space for additional ammunition. The MD-4 was also incorporated on the last fourteen High Noon aircraft. (See pages 54 and 55.)

Offensive Armament:

The offensive armament system of the B-47 consisted of the K-2 bombing and navigational control system and a bomb bay capable of carrying a variety of stores. The success or failure of a B-47 mission revolved around the success of the K-2 bombing system. This system consisted of the H-21D automatic pilot, a computer, interconnecting equipment, APS-23 radar, and the Y-4 or Y-4A bomb sight. Development of the K-2 system began in 1944. Modifications in 1953 resulted in the K-4 which was tested during Project Skytry. In 1953, Project Reliable resulted in improvements to the power source and supply, radar component shockmounting simplification, and component access improvement. In 1954, the IBM MA-2 system was service tested on seventeen B-47Es.

The B-47 was initially designed with a long bomb bay. Subsequently, as mission requirements changed, a short bomb bay configuration was developed. These bomb bay arrangements were interchangeable on certain aircraft. With the short bomb bay, additional fuel was carried in an aft bomb bay tank.

The long bomb bay was designed for carriage of the large special-purpose ordnance of that time period. Differences between the long and short bomb bays insofar as conventional weapons were concerned were as follows:

Hi-Density Configuration

Short Bomb Bay	Long Bomb Bay
6 x 1000 lb	18 x 1000 lb
14 x 500 lb	28 x 500 lb

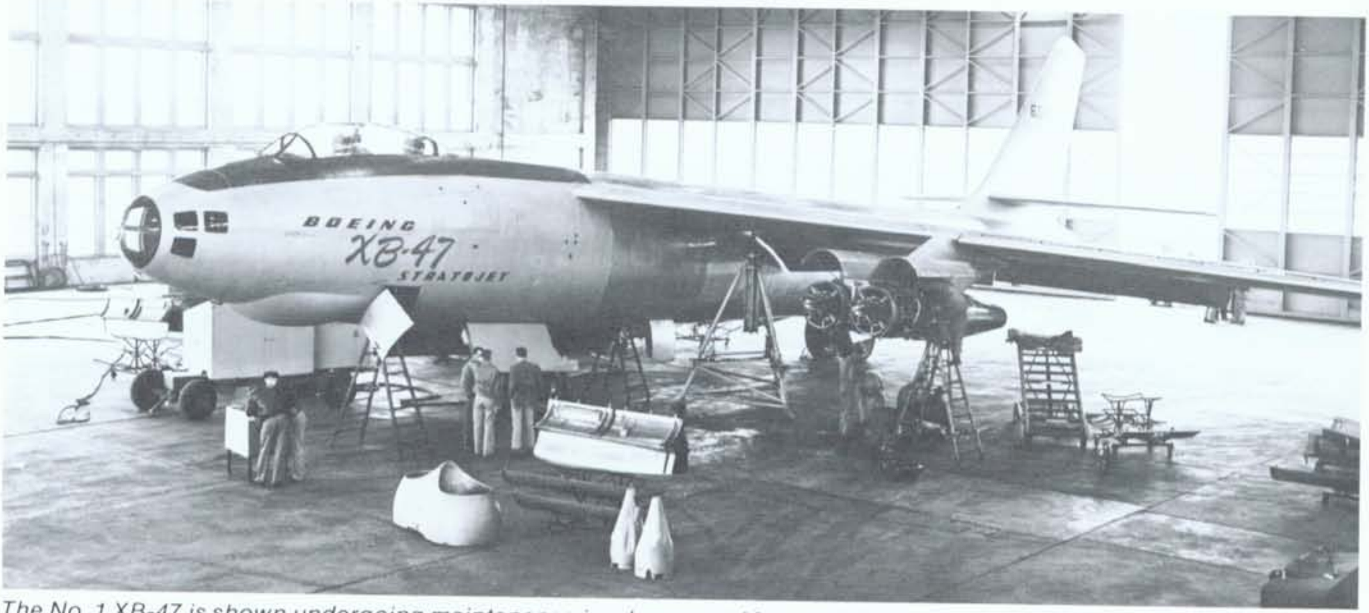
1. The Short Bomb Bay Hi-Density Kits and Long Bomb Bay Hi-Density Kits are adaptable and effective on the 617th (B-47E) and subsequent (500 kits each were procured).

2. The Short Bomb Bay Lo-Density Kit can be utilized only in airplanes 617 thru 730; airplanes 1 thru 616 have provisions for this kit but must be modified to accept it.

With the development of smaller special ordnance, the short bomb bay was capable of carrying these newer weapons.

Experience gained with the B-29 led directly to the use of hydraulically actuated bomb bay doors in order to minimize their cycle time. (See pages 52 and 53.)

XB-47



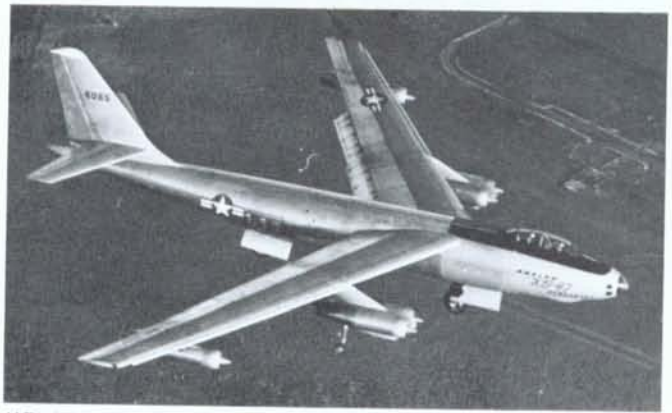
The No. 1 XB-47 is shown undergoing maintenance in a hangar at Moses Lake, Washington. Only the No. 1 aircraft had the lettering on the nose.
(Williams)

Boeing Model 450-3-3

The XB-47 Stratojet was a land-based, six-engined, jet-propelled, medium bomber prototype, capable of long range flights at high altitudes. Empty, it weighed 76,000 lbs; while its gross weight was 125,000 pounds (normal) or 162,500 pounds (overload). The airplane was characterized by a swept empennage and wings with underslung nacelles. All operational equipment, fuel, landing gear, and crew were contained within the fuselage.

Propulsion: Initially, six General Electric J-35-GE-7 (TG-180-B1) or J35-GE-9 (TG-180-C1) axial flow turbojets powered the XB-47s. The engines differed in two respects: the -7 had a sixty inch tail cone and stainless steel sheet firewall, while the -9 had a thirty inch tail cone and an integral firewall. Each engine was capable of developing up to 3,750 pounds of static thrust for takeoff power. On July 8, 1949, the J-35 engines were replaced with J47-GE-11 engines developing 5,200 pounds of static thrust for takeoff power.

Additional takeoff power was gained by use of eighteen Aerojet No. 12 AS-1000 rocket assist units, with a 1,000 pound thrust rating for a duration of twelve to fourteen seconds. Nine RATO bottles were installed in three banks of three in each side of the waist. Each rocket projected through corrosion-resistant exhaust shroud panels on either side of the fuselage. This installation permitted a smooth airflow conducive to greater speed. The RATO bottles could be fired simultaneously or in sequence by pilot-operated selector switches. Exhaust gases in the form of a white cloud of noncorrosive and nontoxic smoke were blown clear of the airplane, eliminating the need for special insulation near the rocket muzzles.

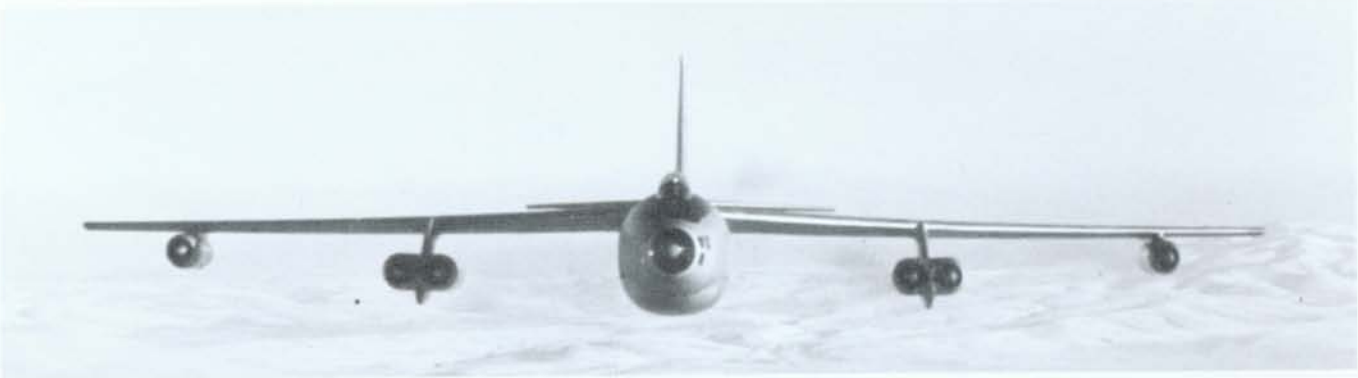


XB-47 on final approach. Note the extended leading edge slats. *(Boeing P7789)*

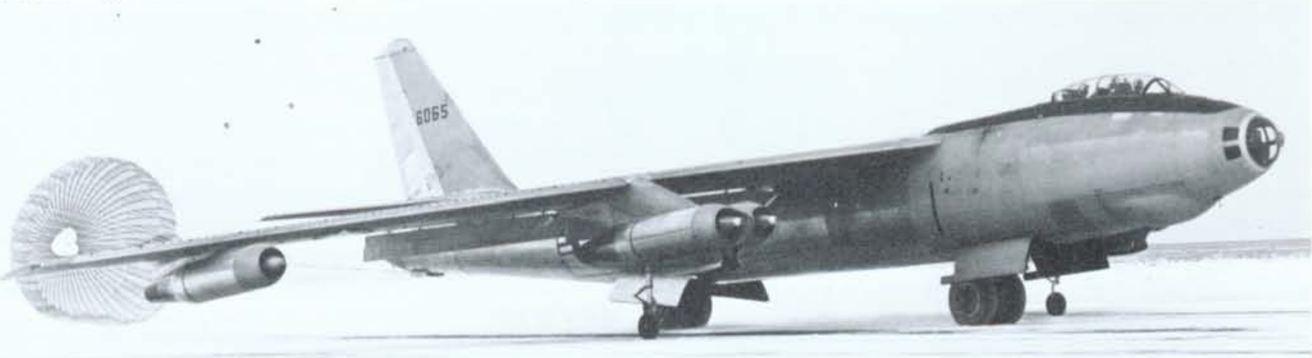
Flight Controls: Ailerons, elevators, and a rudder, each with a trim tab, comprised the primary flight control system. To simulate normal airloads on the control surfaces, an artificial feel system was incorporated. Control cables operated hydraulic actuators for each control surface and served as a mechanical back-up in case of a hydraulic system malfunction.

Wing flaps, flaperons, and slats made up the secondary control system. The Fowler flaps provided high lift and low drag; extending in about twenty seconds and retracting in approximately forty seconds. With the flaps in full extension, the flaperons also functioned differentially to supplement aileron control. Slats were installed across most of the wing leading edge outboard of the inboard nacelles. The slats provided a smooth airflow over the wings at low airspeeds to give good stalling characteristics. The slats operated automatically by the first twenty-five percent of wing flap movement. Later, the slats were removed when it was determined that they were not necessary.

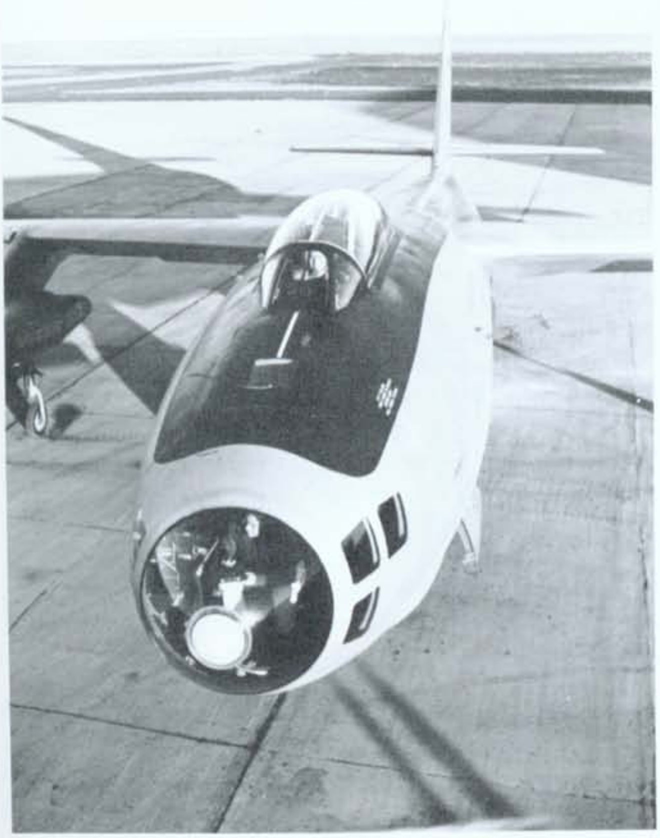
Crew Seats: Upward-firing ejection seats were provided for the pilot, copilot, and navigator. An emergency escape hatch, which departed ahead of the ejection seat, was located above the navigator's compartment and ahead of the pilot's windshield.



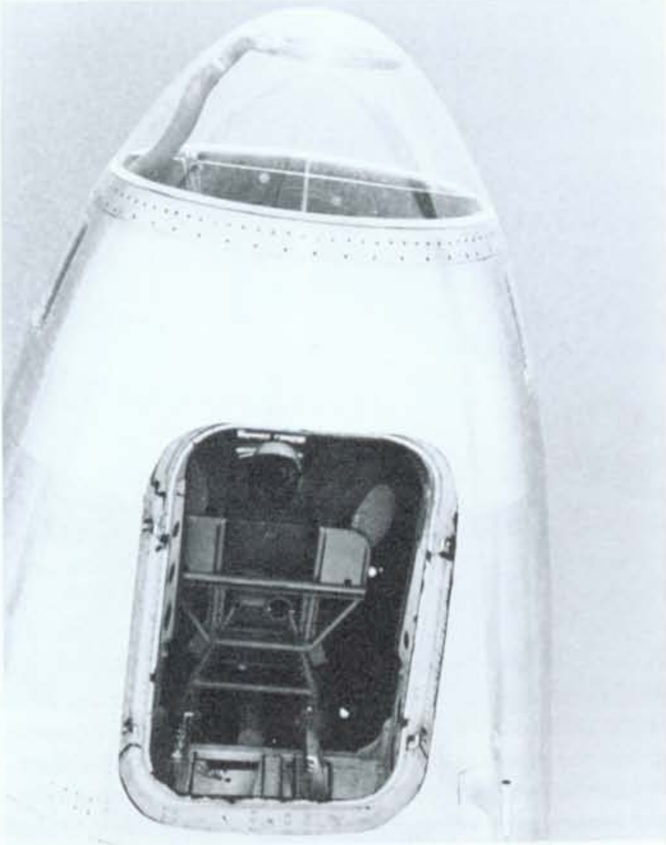
Head-on in-flight shot of an XB-47 clearly shows the wing flexure. *(Williams)*



A ribbon drag chute was tested on the XB-47. The airplane was operating out of Moses Lake, Washington, during the winter in 1948. *(Williams)*

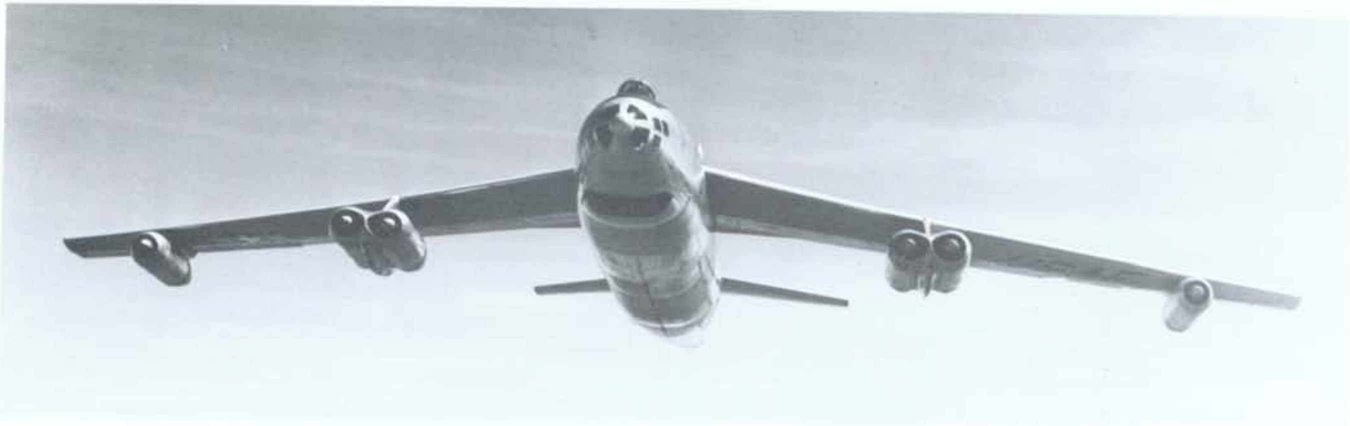


The nose was blown plexiglas on the XB-47 and some of the B-47As. *(Boeing P8709)*



View looking up into the navigator's compartment. The nose thermal anti-icing ring is visible through the nose glazing. The pitot probe is located at the aft left corner of the navigator's hatch. *(Boeing BW60663)*

B-47A



This front view of the B-47A reveals the later built-up nose windows. The wing flexure is not as pronounced in this view. (Manion)

Boeing Model 450-10-9

In June 1949, the government decided to relocate Boeing's bomber production inland. The B-47As were to be built at the Boeing-Wichita facility; whereas Boeing-Seattle would continue to build C-97s, complete the B-50 program, and manufacture the B-52 mock-up. Cost-plus-a-fixed-fee Letter Contract W33-038 AC-22413 was approved on November 22, 1948. The contract called for procurement of ten B-47As and a follow-on procurement of three additional forty-one B-47Bs. Deliveries were scheduled for January 1950 through March 1951. The cost for the ten B-47As was quoted as $28,500,000. Concurrently, the USAF was working with Boeing for the B-50 and B-50C (later designated B-54), and with Convair for the B-36. Cancellation of B-54 production and savings accrued from B-50D and C-119B production made funds available for procurement of five additional B-47Bs. Between June and November 1949, the quantity of B-47s contemplated for production varied several times, but eventually was set at ten B-47As and eighty-seven B-47Bs.

B-47A DESCRIBED

Structurally, the B-47As were similar to the XB-47s. Some variation did appear in the B-47A nose glazing on later aircraft.

Propulsion: Six General Electric J47-GE-11 axial-flow turbojets, each capable of developing up to 5,200 pounds static thrust for takeoff, powered the B-47As. Additional power was provided for takeoff through the use of eighteen Aerojet 15KS-1000 rocket bottles each developing 1,000 pounds thrust for fifteen seconds. The bottles were internally mounted as on the XB-47s.

Flight Controls: Ailerons, elevators, and a rudder comprised the primary flight control system. Trim tabs were installed on each primary flight control surface. An artificial feel system was incorporated into these controls to simulate normal control feel. Conventional cables operated hydraulic actuators for each control surface and also provided for manual reversion in the event of a hydraulic system failure.

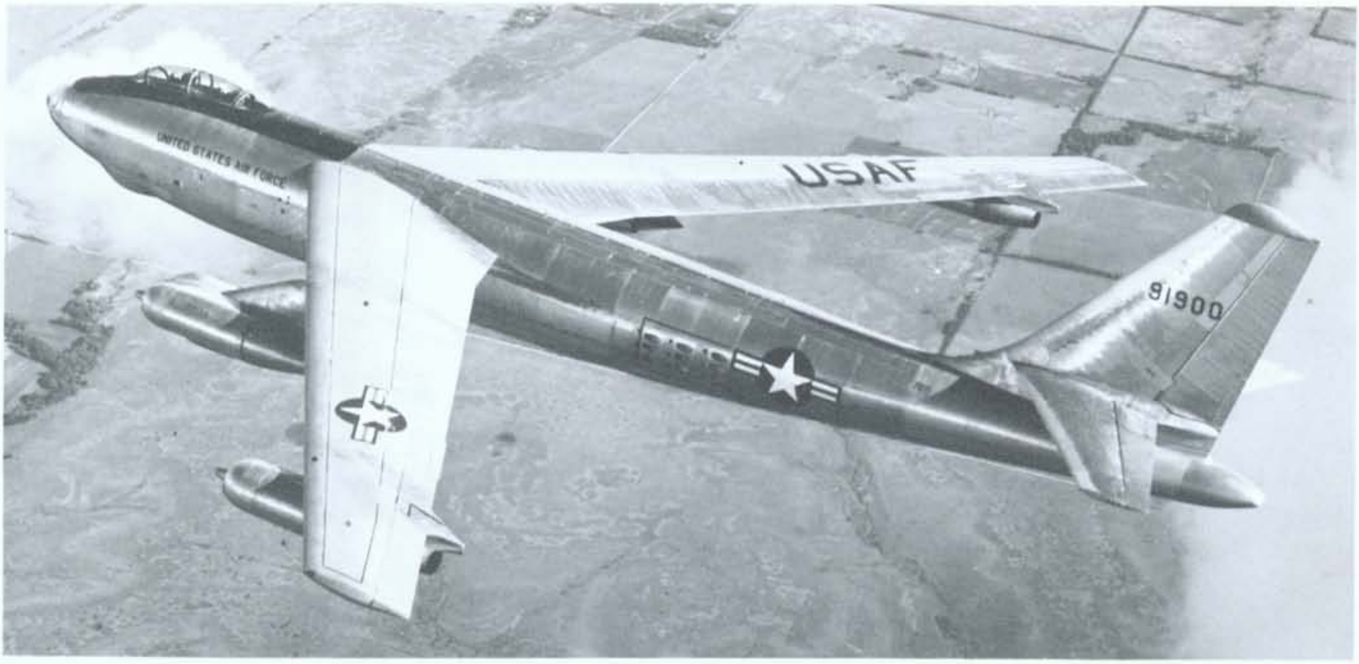
Secondary controls consisted of wing flaps, slats, and flaperons. The flaps were located inboard on the wing, spanning the sixteen plus feet of the trailing edge between the fuselage and the inboard nacelles. Outboard of the flaps were the flaperons with a span in excess of fifteen feet. The flaperons operated congruently as flaps or differentially as ailerons when the flaps were extended. The leading edge slats were deleted when flight testing proved them to be unnecessary.

Crew Seats: Ejection seats were provided for the pilot, copilot, and navigator. All seats had a vertical adjustment. The navigator's seat could rotate ninety degrees toward the navigator's table. A 180 degree swivel was afforded to the copilot's seat for access to the aft-facing gunner's station. All seats ejected upwards. The navigator's emergency escape hatch was located in the nose ahead of the pilot's windshield.

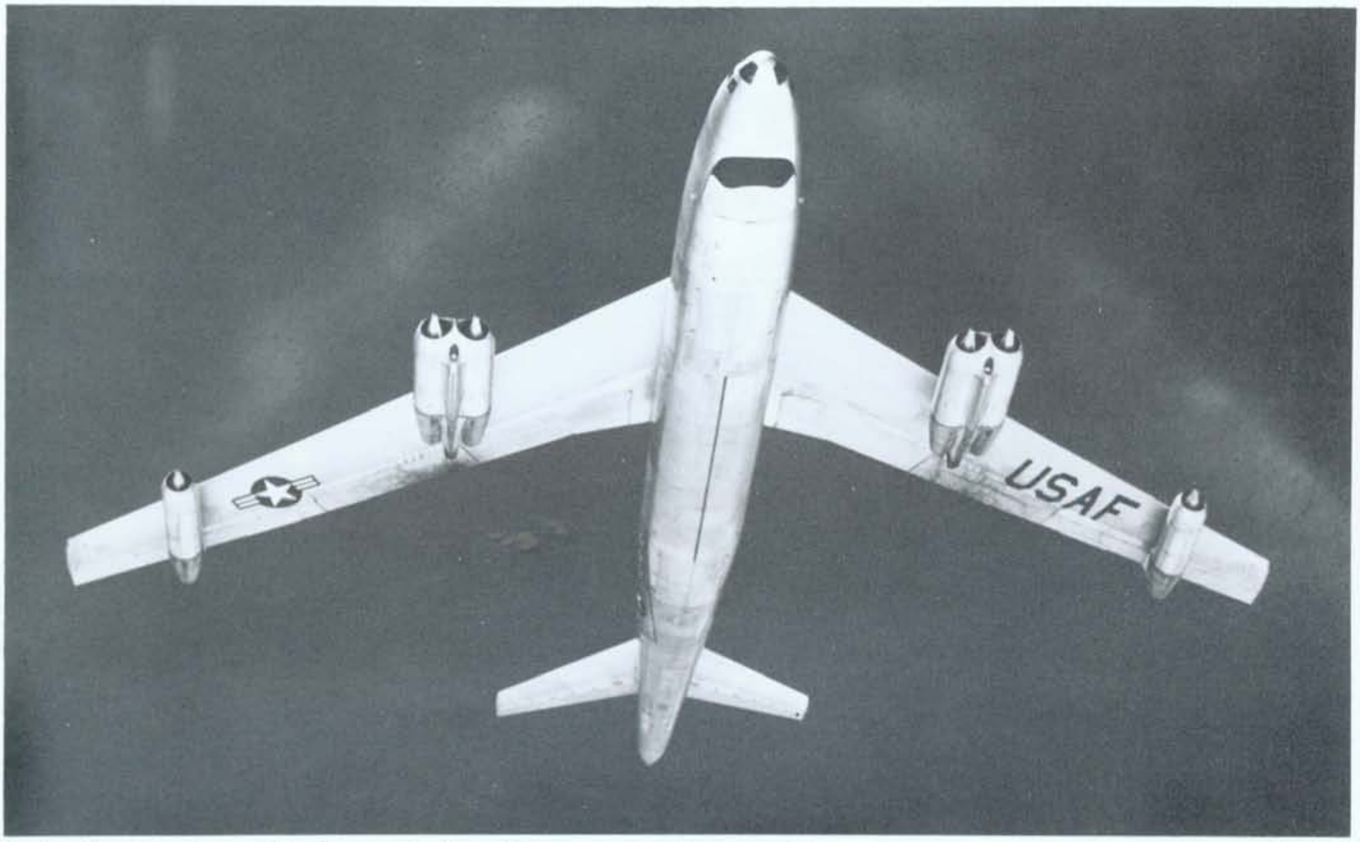
Electronic Equipment: The electronic equipment on the B-47As consisted of: AN/ARC-3 VHF command radio, RC-193A marker beacon, AAF combat interphone, AN/ARN-6 radio compass, BC-348 radio set, AN/ART-13A radio set, RC-103A localizer, AN/ARN-5A glide slope indicator, and SCR-695A IFF. A modified Minneapolis-Honeywell E-6 autopilot, known as the MH-7, was installed on the B-47A.

Navigator's Equipment: Because the B-47As were service test aircraft, operational equipment configurations varied. All aircraft had a one-man navigator-bombardier-radio operator's station installed in the nose. A horizontal bombsight and bombsight stabilizer were installed in the nose. A radar indicator, bombardier's instrument panel, and bombing control units were located on the right side of the compartment.

Bombing Equipment: A single purpose bomb bay could accommodate a 10,000 pound bomb. Space and structural provisions were available for 1,000; 2,000; 4,000; 12,000 and 22,000 pounds of general purpose bombs and their associated racks. A K-2 radar bombing, navigational, and computing system was installed on some airplanes. The bomb bay doors were hydraulically operated by the bomb salvo switch or by the bombing system.



Top view of the first B-47A-BW, s/n 49-1900, reveals the wing walk markings on the left wing, the "Yahudi" fillet at the trailing edge flap root, and the defenseless tail cone. (via Williams)

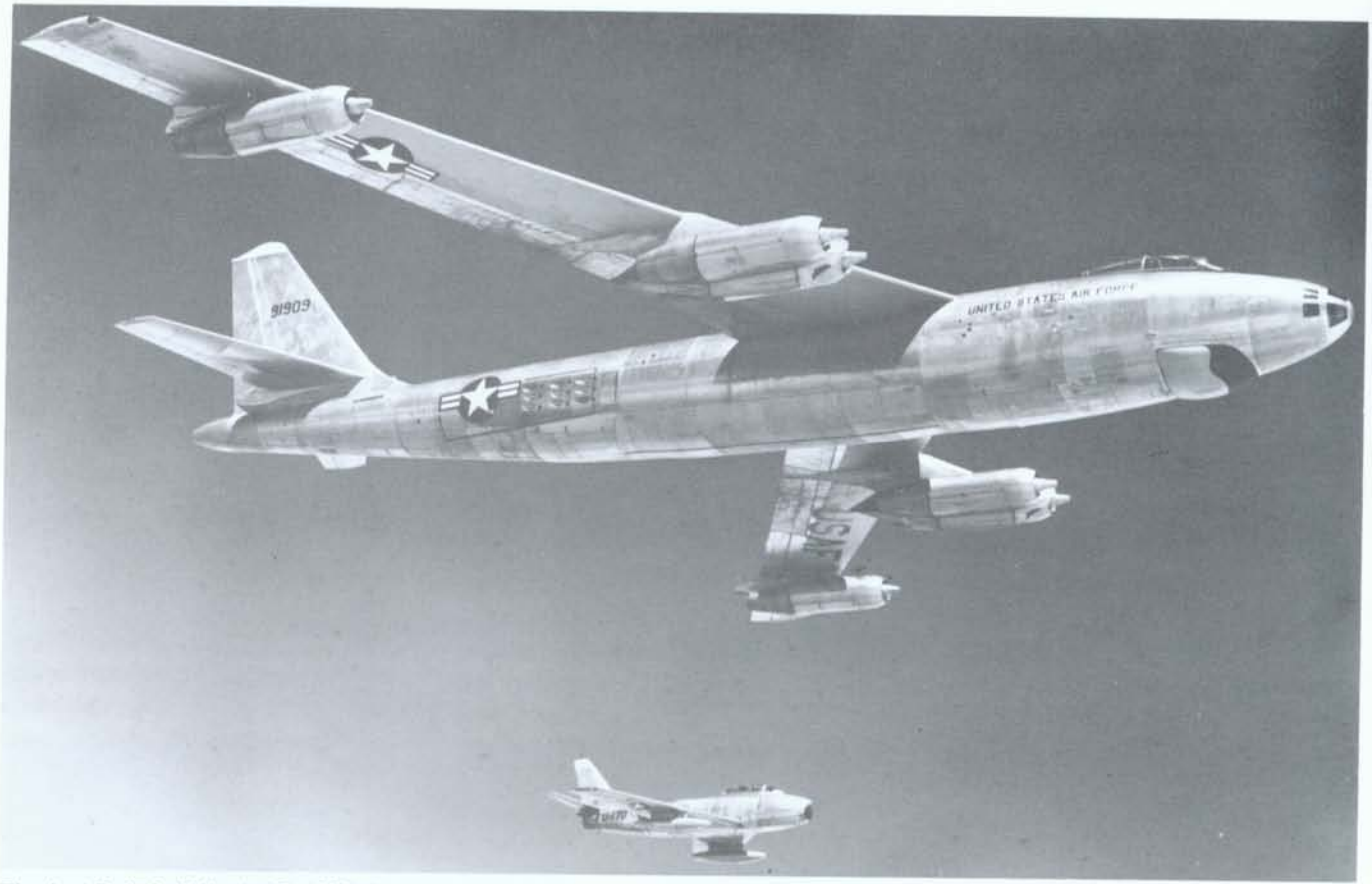


Underside view of a B-47A. The centerline stripe marks the long bomb bay doors. (Manion)

Photographic Equipment: Space and structural provisions were available for potential installation of a Type A-8, A-11A, A-17A, or A-27A vertical camera.

Gunnery Equipment: A gunnery station was located aft of the copilot, accessible by rotating the seat aft. The station included a table, oxygen equipment, and space and structural provisions for the addition of electronic sighting equipment for a tail turret.

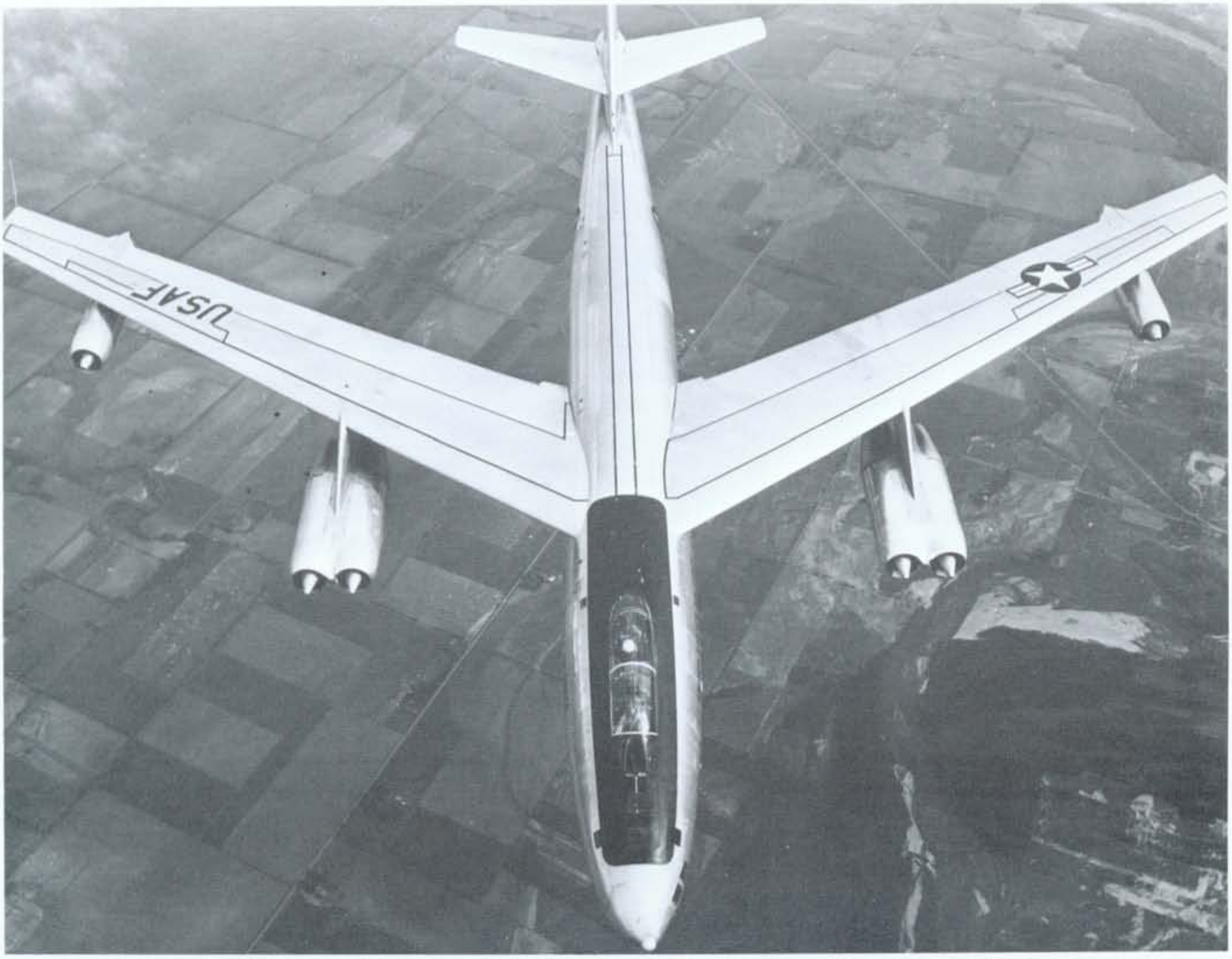
Space and structural provisions were available for future installation of a pair of Type M-3 .50 caliber machine guns. The B-47As were produced with a tail cone in lieu of a tail turret.



The last B-47A-BW, s/n 49-1909, is seen with F-86A-5-NA, s/n 49-1170, which serves as a chase plane. The B-47A retained the rounded fin cap installed on the XB-47s. Note the built-up nose window arrangement as compared to the blown nose on the XB-47s. *(Manion)*

The first B-47A in a nose dock undergoes maintenance at night. *(Boeing-Wichita BW 55166)*

B-47B



This plan view of a B-47B clearly shows the wing walk areas and the raceway walk area along the fuselage spine.
(Boeing BW60962)

Boeing Model 450-67-27

Basically, the B-47B was identical to the B-47A with the changes necessary for an operational capability. These modifications consisted of the following: improved crew comfort through changes in heating, pressurization, and ventilation, NESA glass deicing for the windshield, rain repellant in lieu of windshield wipers, and hydraulic boost for all flight controls. A spoiler was added to the main entrance in order to facilitate in-flight escape from the aircraft.

Thermal anti-icing was added to the wings and empennage. This system utilized hot bleed air from the engines.

After development, twin .50 caliber machine guns were added to the tail for defensive armament. A B-4 fire control system was installed.

Modifications to the fuel system included the addition of a single-point ground refueling station and an in-flight refueling receptacle.

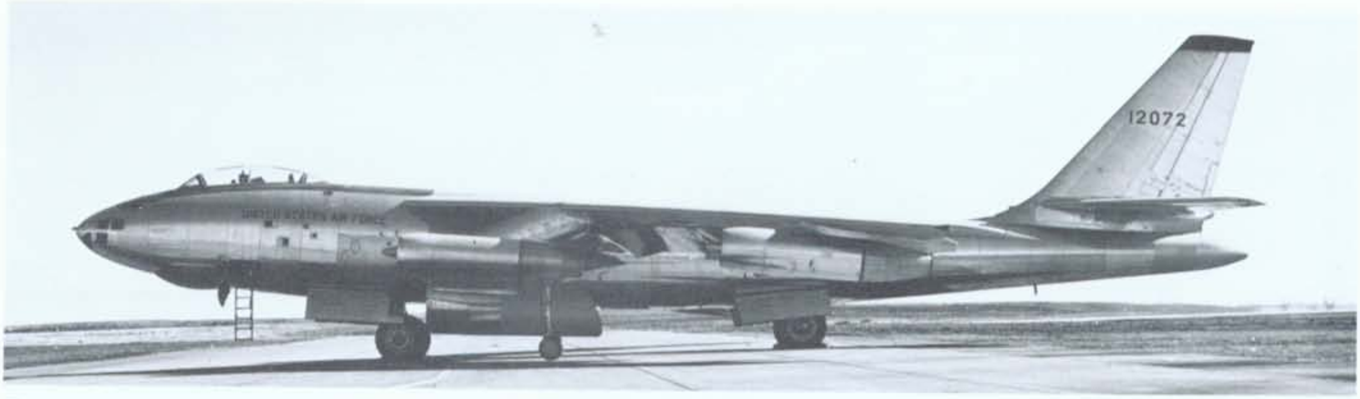
The first 298 B-47Bs were powered by six J47-GE-23 engines, each developing 5,910 pounds of static thrust at 7,950 rpm. Subsequently, J-47-GE-25 engines were installed on B-47B-I aircraft. The -25 engines developed 5,970 pounds of static thrust at the same rpm.

The nose windows changed with the B-47B. The glass nose piece was replaced by a solid piece of sheet metal. Individual windows, four on the left and one on the right, remained on the nose.

The vertical fin was squared off.

The electronics equipment on the aircraft was comprised of the following:

VHF Command	AN/ARC-27
Omni-Direct. Recvr	AN/ARN-14
Bombing-Nav. Radar	K-4A
Fire Control System	B-4-400
Radar Beacon	AN/APN-76
Interphone	USAF Combat
IFF	AN/APX-6
Glide Path Recvr	AN/ARN-18
Radio Compass	AN/ARN-6A
ECM	AN/APT-5A
Marker Beacon	AN/ARN-12



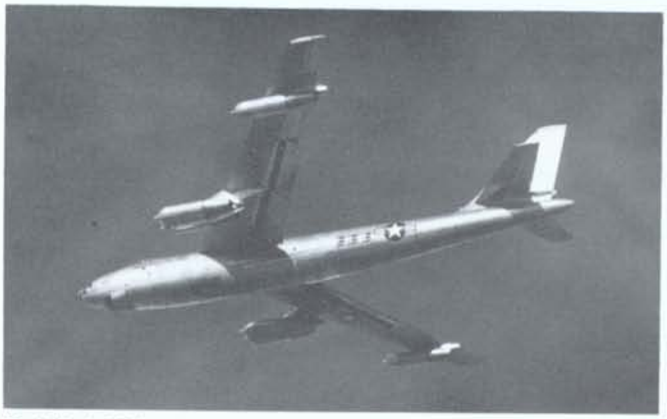
The clean lines of the B-47B-25-BW, s/n 51-2072, are evident in this view. A short bomb bay has been installed on the aircraft. By 1952, when this photo was taken, production defensive armament had not yet materialized. The vertical fin cap was revised to a squared off configuration with the B-47B. *(via Williams)*

Emergency Keyer	AN/ARA-26
Chaff Dispenser	AN/ALE-1
Warning Radar	AN/APS-54

Three bomb bay configurations were used on the B-47B. These were: a short bomb bay with a high-density capacity; a long bomb bay with a high density capacity; and a standard long bomb bay. The bomb load capabilities for each configuration were as follows:

1. SHORT BOMB BAY
Hi-Density Kit

No	Class (lb)
WW II (Box Fin) Not Carried	
INTERIM (Conical Fin)	
3	2000
6	1000
13	500
NEW SERIES	
7	750



B-47B-1-BW, s/n 49-2642, with flaps extended. Outboard flaperon operated differentially to serve both as a flap and an aileron. *(Williams)*

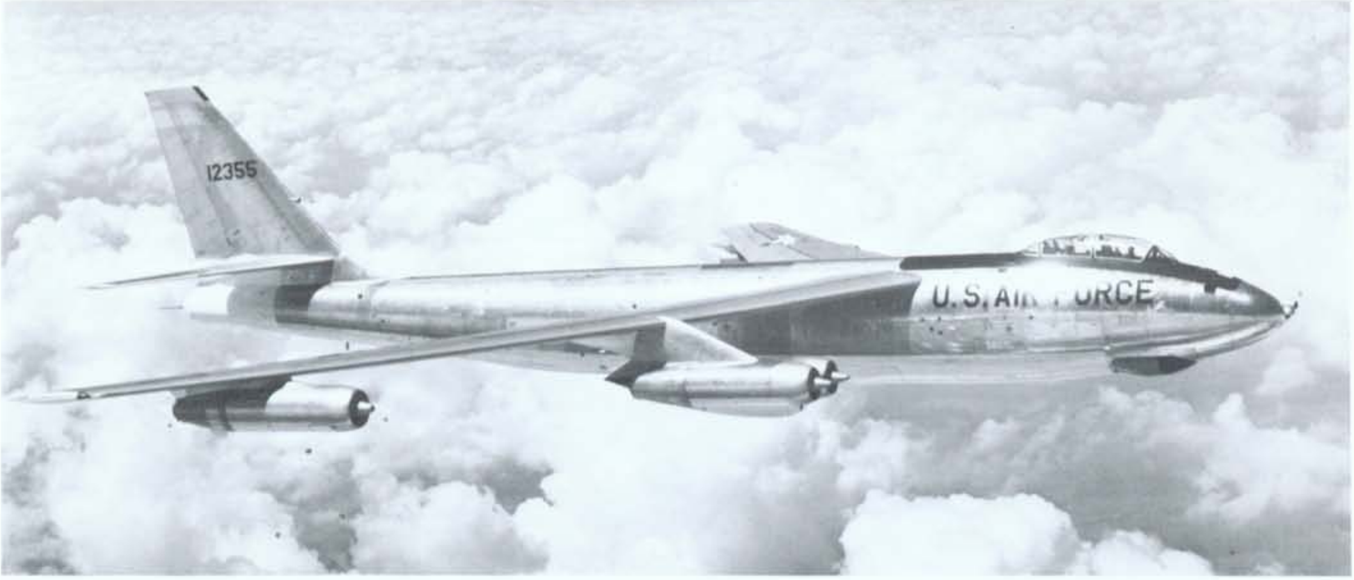
2. LONG BOMB BAY
Hi-Density Kit

No	Class (lb)
WW II (Box Fin) Not Carried	
INTERIM (Conical Fin)	
6	2000
18	1000
28	500
NEW SERIES	
*1	25,000
1	12,000
1	10,000
4	3000
21	750

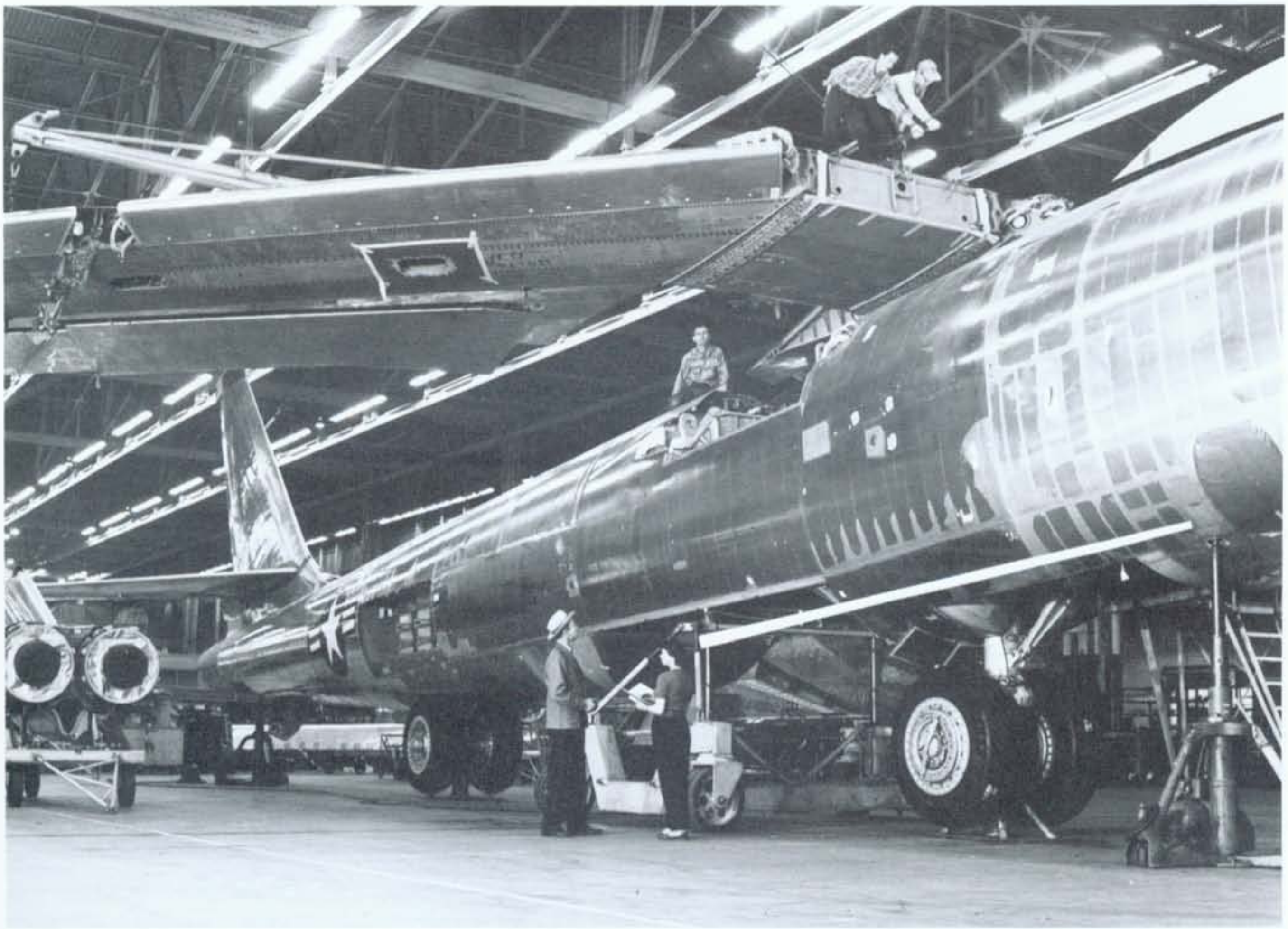
3. LONG BOMB BAY

No	Class (lb)
WW II (Box Fin)	
2	4000
9	2000
16	1000
16	500
INTERIM (Conical Fin)	
6	2000
8	1000
8	500
NEW SERIES	
*1	25,000
8	750

* A capability only. No Air Force Requirement.

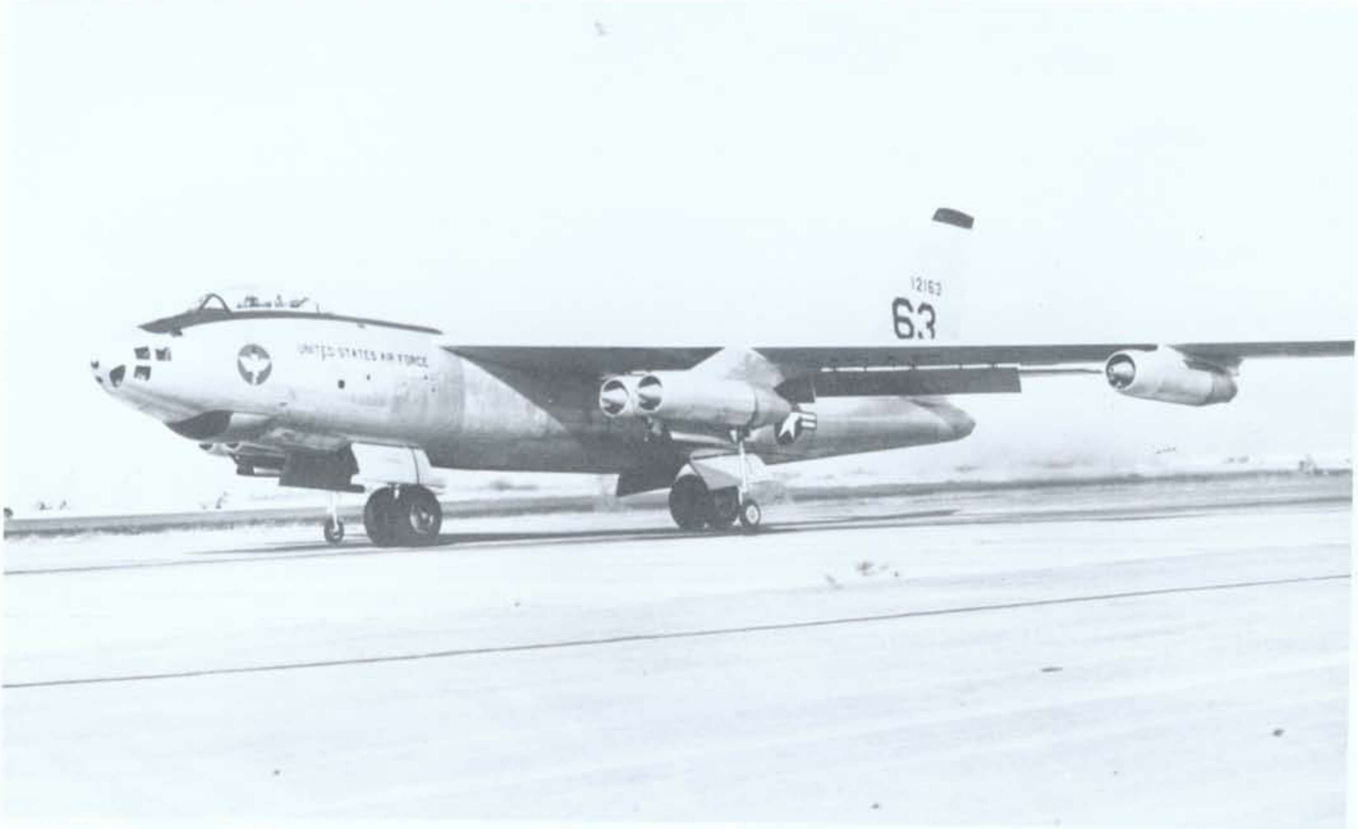


By 1955, B-47B-50-BW, s/n 51-2355, had undergone modifications to revise the nose windows, delete the internal RATO, and install the A-5 fire control system. This aircraft has a partial white anti-radiation paint scheme with the national insignia removed from the waist position. *(Cusick via Williams)*



B-47B under construction. While the fuselage is held steady on jacks, the built-up wing assembly is lowered into place. The aft right wing attach point is visible in the Station 515.50 bulkhead. Four milk bottle pins held the wing in place. These pins became the subject of a major modification program after the airplane was flown at higher gross weights than originally planned, and used for toss bombing. Bomb bay spoilers may be seen just aft of the forward landing gear. Waist cutout will hold RATO bottles. *(Boeing BW60193)*

TB-47B



TB-47B-35-BW, s/n 51-2163, takes off from Wichita AFB. *(NASM 84-7054)*

Boeing Model 450-11-10

The TB-47B version was developed through modification of standard B-47B aircraft. Its purpose was for transition training of both pilots and navigators. Initially, the aircraft were operated by the Air Training Command, but subsequently, the mission transferred to the Combat Crew Training Wing. These aircraft were based at Wichita AFB, Kansas.

A fourth crew station was added for an instructor. The crew seat was located in the catwalk beneath the pilots' stations. The co-pilot's station was modified in order to include complete pilot's station instrumentation.

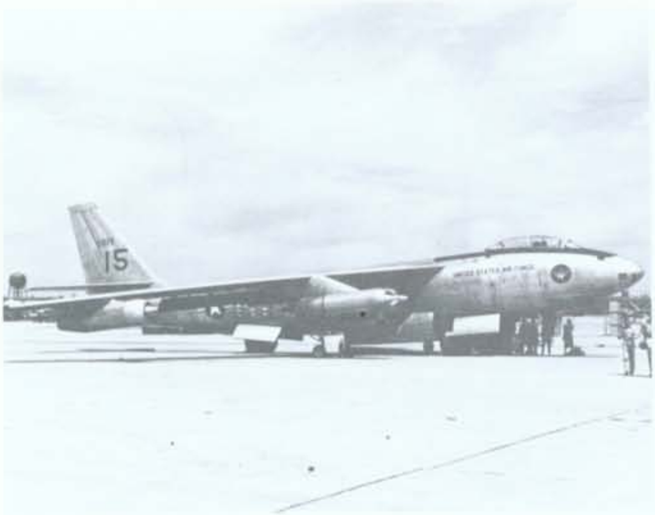
Three TB-47Bs fly in formation. Note that the aircraft in the foreground has U.S. AIR FORCE stenciled on the top of its right wing. *(NASM 84-7052)*

Modification was programmed for eighty-six aircraft. The modifications were conducted by both Douglas Aircraft at Tulsa, Oklahoma, and the USAF Air Materiel Command's Oklahoma Air Materiel Area (OCAMA) depot at Oklahoma City. Modifications were conducted under the Field Goal program. The conversions at the Douglas-Tulsa plant began on January 11, 1953.

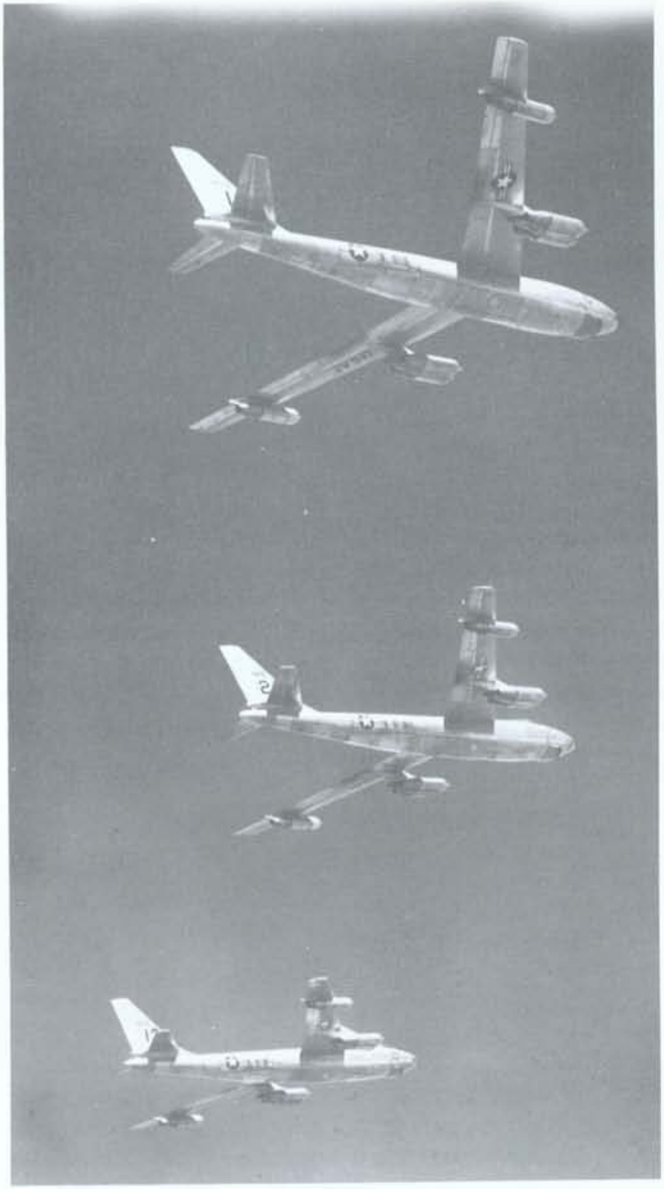
The TB-47Bs had the same bombing capabilities of the B-47B. However, the tail turret and its associated equipment were not carried.

The basic requirements for prospective B-47 pilots included a minimum of 1,000-1,500 hours in four-engined aircraft. During training, pilots received fifteen weeks of schooling: 6 weeks of transition in the T-33A, three weeks of transition in the B-47, and six weeks of combat crew training. Prior training for the navigator/bombardier/radar operator necessitated only the combat crew training phase at the B-47 school.

Modeled after the training facilities at Wichita AFB (later McConnell AFB), across the airfield from the Boeing Company, additional units were established at Pinecastle AFB, Orlando, and MacDill AFB, Tampa, Florida. In April 1953, it was reported that pilots from SAC wings transitioning into the B-47 received thirty-five hours in the T-33A and twenty-five hours in the B-47. Aircraft commanders received an additional fifteen to twenty-five hours of training in the B-47. Flying the B-47 was not inherently difficult to learn. It was just more important for the pilot to control airspeeds and attitudes throughout the flight.

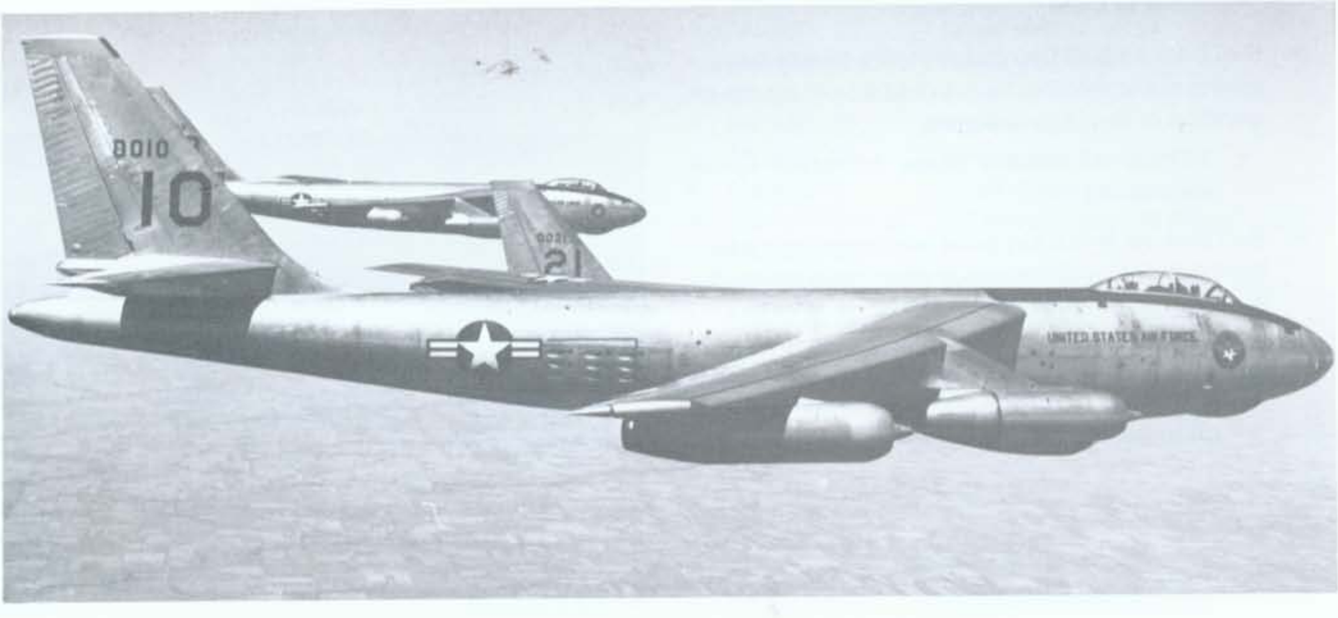


Above: A May 1952 vintage picture of TB-47B-10-BW, s/n 50-015, at Wichita AFB. This aircraft had a sliding canopy. (Boeing BW60479)

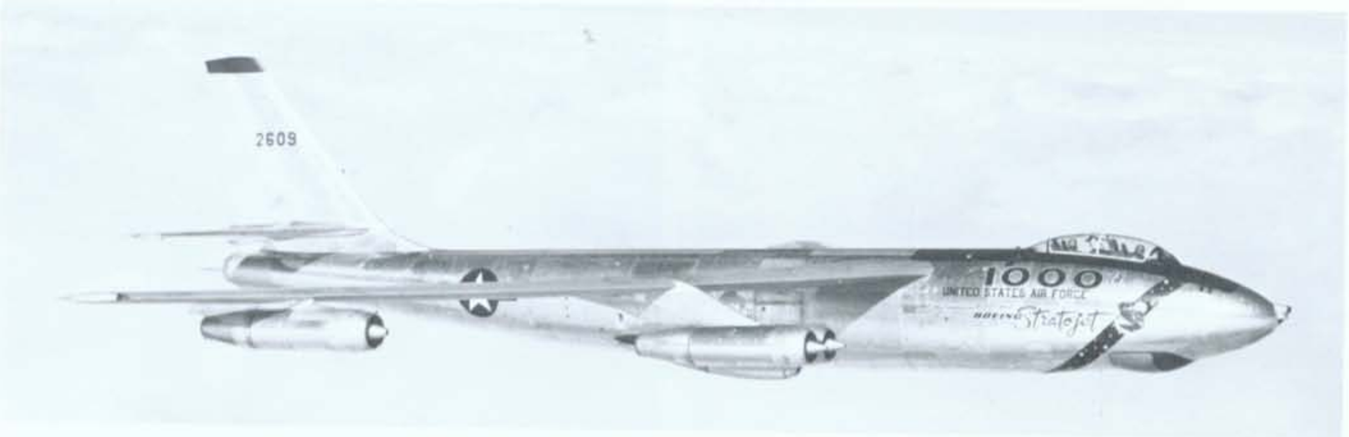


*Right: TB-47Bs reveal their oval antennas mounted on the bomb bay door. (Boeing *12337)*

Below: TB-47B crews undergoing formation flying training. (Boeing BW60758)



B-47E



The 1000th B-47 was B-47E-105-BW, s/n 52-609.

(Boeing P14926)

Boeing Model 450-157-35

Basically, the B-47E differed from its predecessor, the B-47B, by having J47-GE-25 engines with higher thrust, and a strengthened landing gear to permit higher gross weights. Major modifications resulted in Roman numeral suffixes being applied in order to denote airplane configuration changes. These configurations were as follows:

- B-47E-I: All B-47E airplanes incorporating the following major modifications:
  - Operable water injection
  - Phase II ECM
  - Thirty-three RATO rack
  - 200,000 pound gross weight capability
  - Aft auxiliary fuel tank (large ATO tank)
  - Cycle I bombing/navigational system
- B-47E-II: All B-47E airplanes incorporating the following major modifications in addition to the configuration of B-47E-I airplanes:
  - Phase XI modifications
  - Phase III ECM
- B-47E-III: All B-47E airplanes incorporating the following major modifications in addition to the configuration of B-47E-II airplanes:
  - 3-Phase ac electric power (constant speed alternators)
- B-47E-IV: All B-47E airplanes incorporating the following major modifications in addition to the configuration of B-47E-III airplanes:
  - 230,000 pound gross weight capability
  - Cycle I CP bombing/navigational system with MA-7 bomb/nav radar
  - Short bomb bay configuration only

B-47Es were equipped with the following bomb bay configurations:

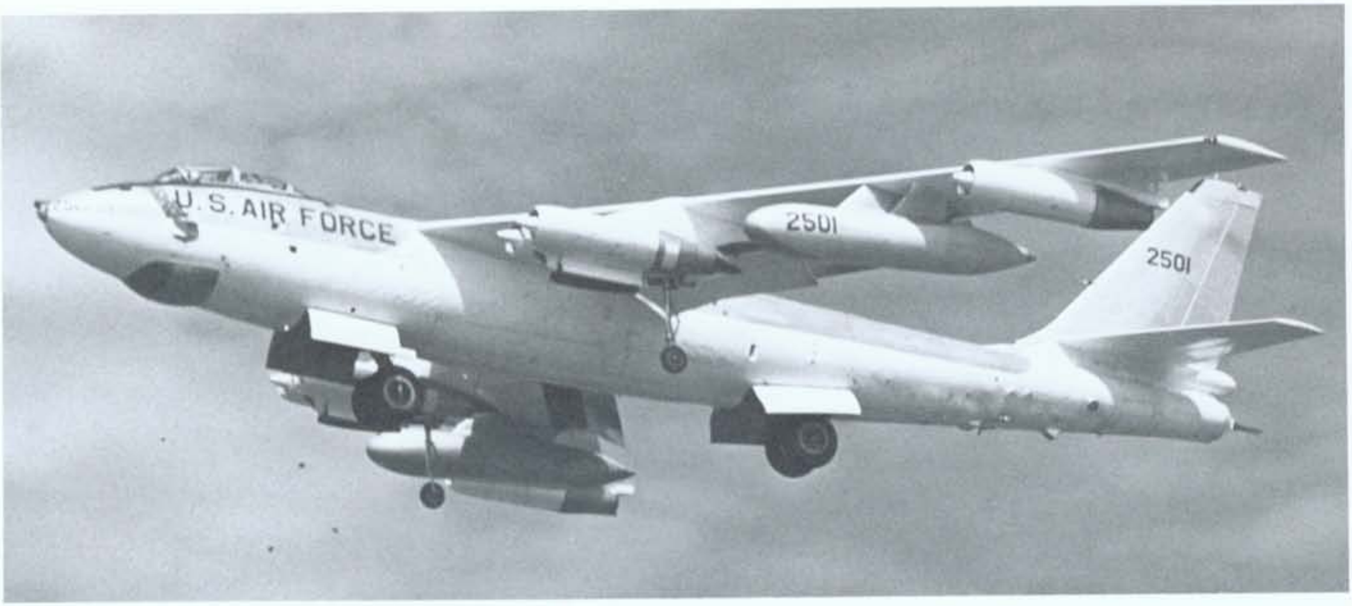
- 1 x 10,000 pound special weapon
- Conventional stores as follows:

1. SHORT BOMB BAY
Hi-Density Kit

No	Class (lb)
WW II (Box Fin) Not Carried	
INTERIM (Conical Fin)	
3	2000
6	1000
13	500 (T-127)
14	500 (M-123)
NEW SERIES	
6	750 Chem. Cluster
7	750

2. LONG BOMB BAY
Hi-Density Kit

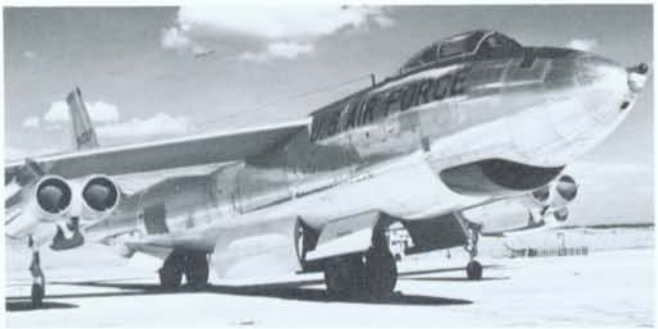
No	Class (lb)
WW II (Box Fin) Not Carried	
INTERIM (Conical Fin)	
6	2000
18	1000
28	500
NEW SERIES	
1	12,000
1	10,000
4	3000
21	750



B-47E-90-BW, s/n 52-501, equipped with Phase II ECM has a full white belly. No national insignia appeared on the waist or under the wings. The drop tanks were silver on the inboard surfaces and day-glo orange on the outer surfaces. The radio call numbers appear on the fin, drop tanks, and nose. *(Williams)*

3. SHORT BOMB BAY
Lo-Density Kit

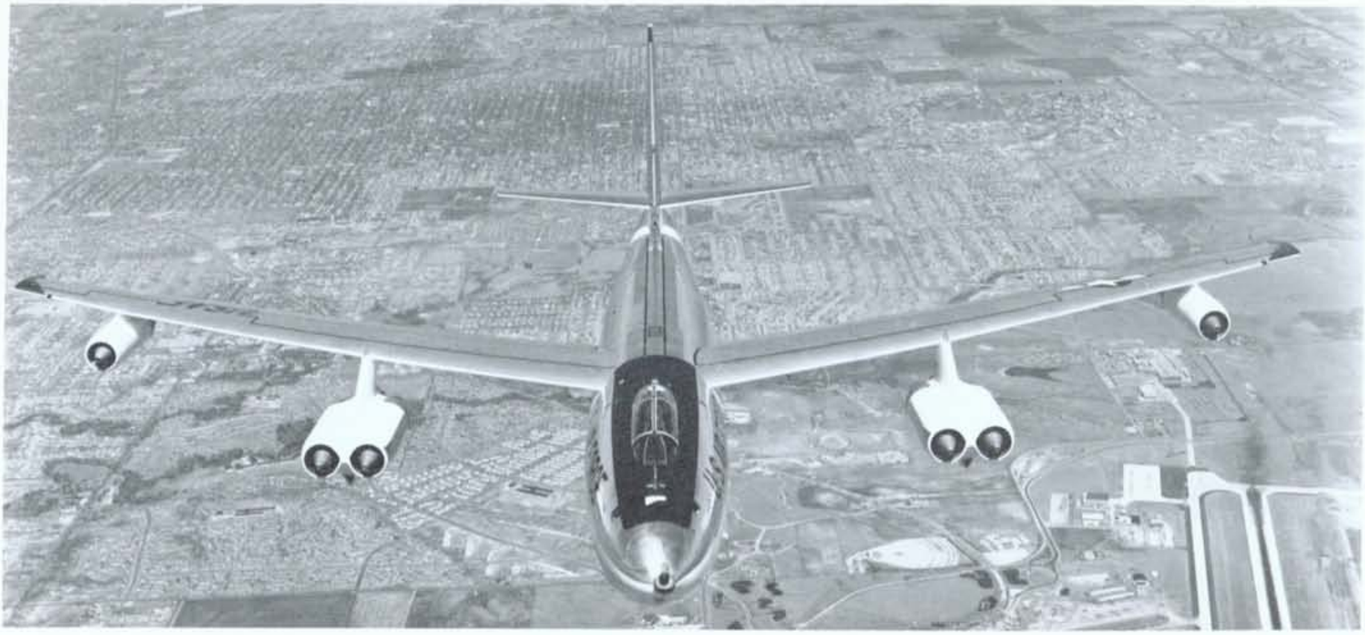
No	Class (lb)
WW II (Box Fin) Not Carried	
INTERIM (Conical Fin)	
3	2000
4	1000
4	500 (T-127)
8	500 (M-123)
NEW SERIES	
4	750 Chem. Cluster
4	750



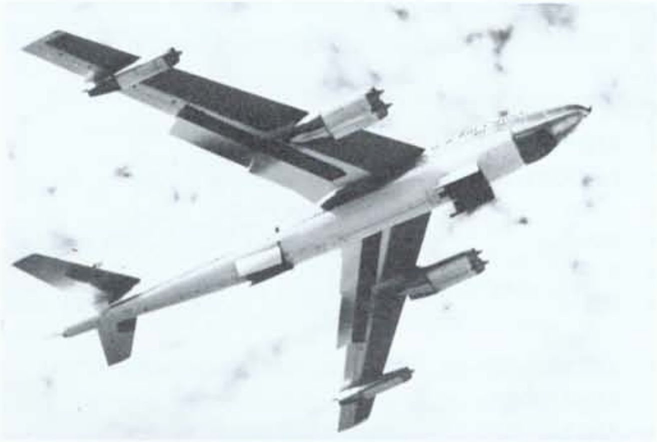
B-47E-130-BW, s/n 53-4233, with short bomb bay and Phase III ECM. The forward mast for the AN/ARC-21X HF liaison radio may be seen just aft of the canopy. A warning radar antenna is mounted above the Y-4 periscopic bomb sight. *(Boeing P17537)*

The following electronics equipment was carried on the B-47E:

• AN/ARC-27	UHF Command
• AN/ARN-12	Omni-Directional Receiver
• K-4A	Bomb/Nav Radar
• MA-7	Bomb/Nav Radar (52-2279 and on)
• A-5	Fire Control System
• MD-4	Fire Control System (51-5221 and on)
• AN/APN-76A or AN/APN-69	Rendezvous Equipment
• AN/AIC-10	Interphone Equipment
• AN/APX-25 or AN/APX-6A	IFF
• AN/ARN-18	Glide path receiver
• AN/ARN-6	Radio compass
• AN/ALT-6 (2ea)	ECM
• AN/ARN-12	Marker beacon
• AN/ARA-26	Emergency keyer
• AN/ALE-1	Chaff dispenser
• AN/ARC-21X or AN/ARC-65	HF liaison radio (B-47E-IV only)
• AN/APS-54	Warning radar (B-47E-IV only)
• AN/ARA-25	Direction finding group (B-47E-IV only)
• AN/APG-32	Gun laying radar (B-47E-IV only)
• AN/ARN-21	TACAN (B-47E-IV only)
• AN/ALT-6 (2ea)	ECM combinations
• AN/ALT-6A	
• AN/ALT-7	
• AN/ALT-8	
• AN/ALT-9	(except B-47E-IV)
• AN/ALT-16A	(except B-47E-IV)

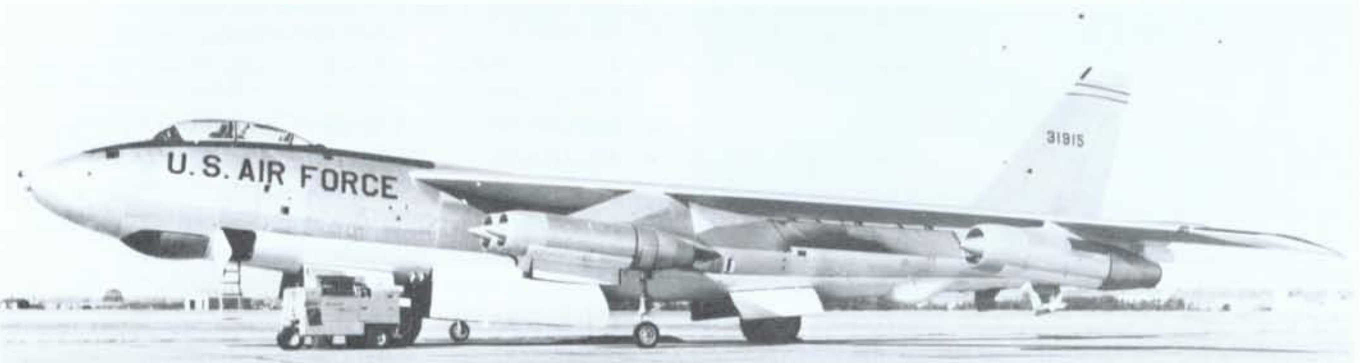


This B-47E is equipped with Phase III ECM gear as denoted by the extended wingtips. With the full white paint, the entire struts and nacelles were painted white. This 1953 vintage aircraft had a day-glo orange waist band.(Cusick via Williams)



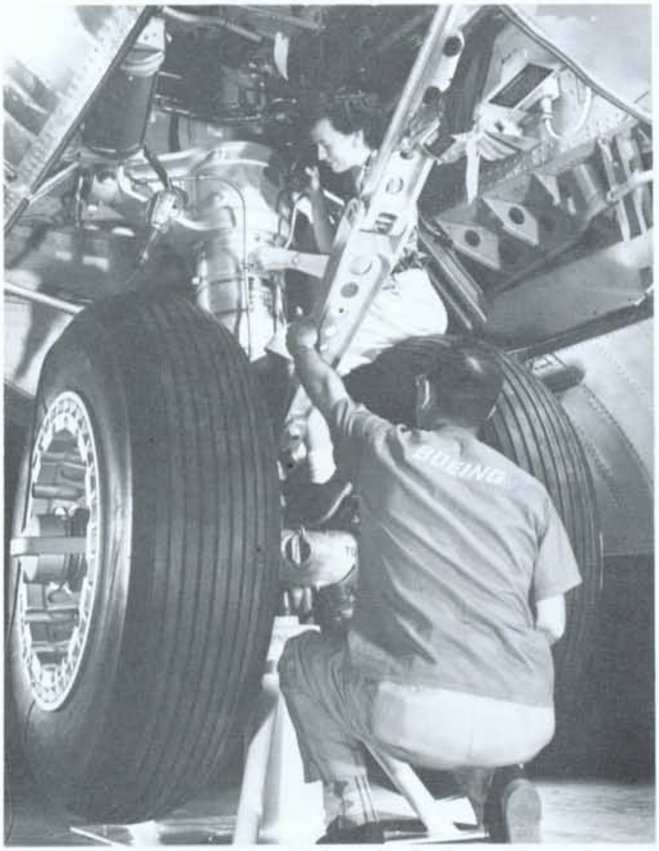
This B-47E has a partial white anti-radiation paint scheme. Note the standard annodized aluminum finish remaining under the wings and the forward inboard portion of the horizontal stabilizers. No national insignia was carried on the undersurfaces of B-47s with partial white finishes. (Boeing BW93752)

This view of 53-6244 hints at tbe wingtip extensions. (Cusick via Williams)

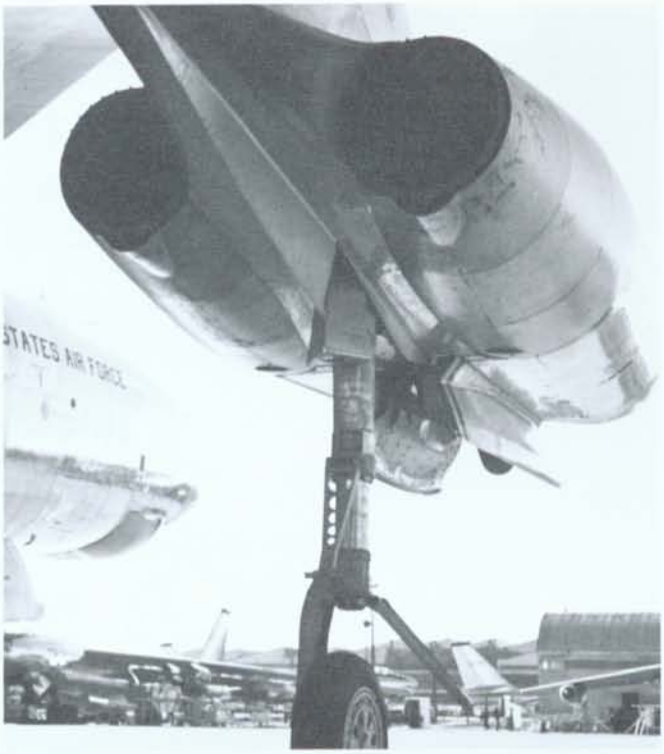


B-47E-70-LM, s/n 53-1915, with Phase III ECM gear as denoted by the extended wingtips and aft belly radome. Approach and landing chute doors are open. (via Seely)

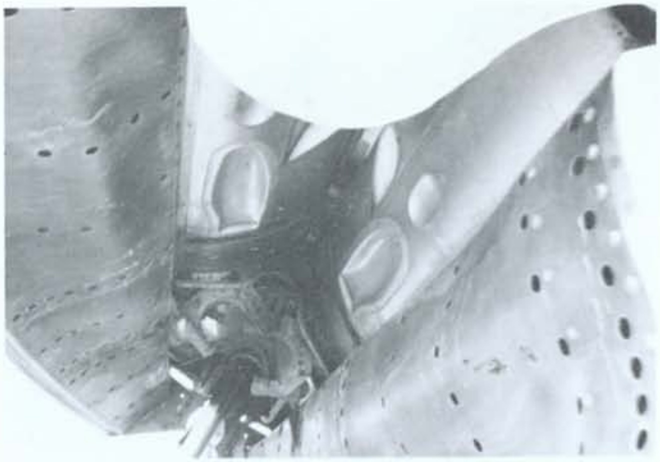
LANDING GEAR & CHUTE



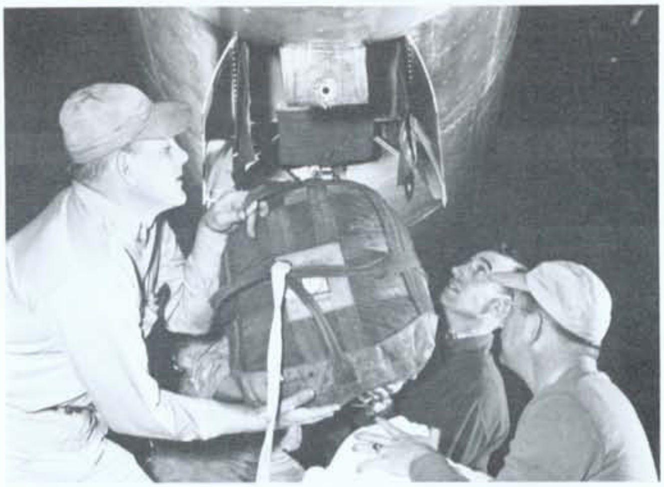
Aft main gear being installed at the factory. (Boeing BW60658)



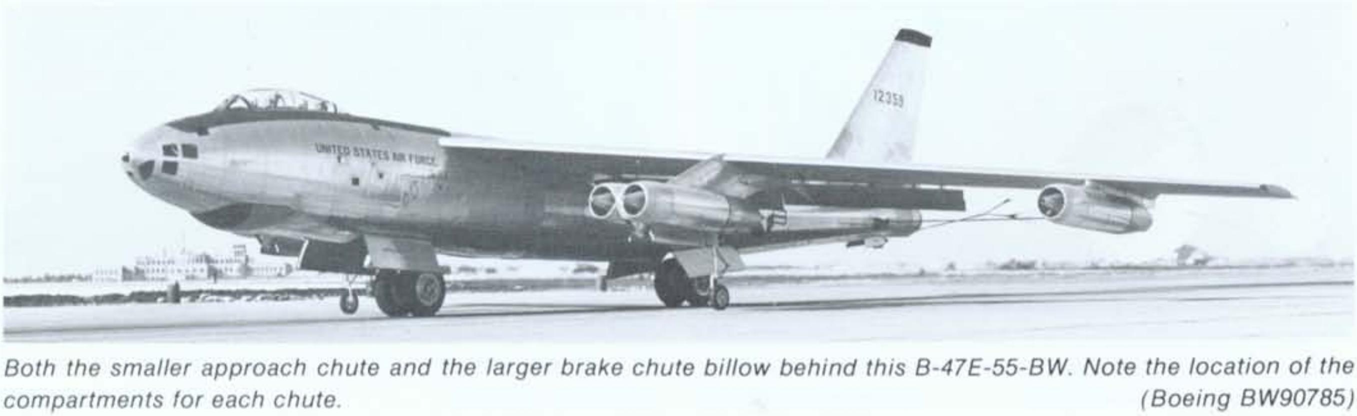
Outrigger gear details. The torque links have been disconnected for ground handling. (Boeing BW60179)



Outrigger gear wheel well details looking aft. (Kinzey)

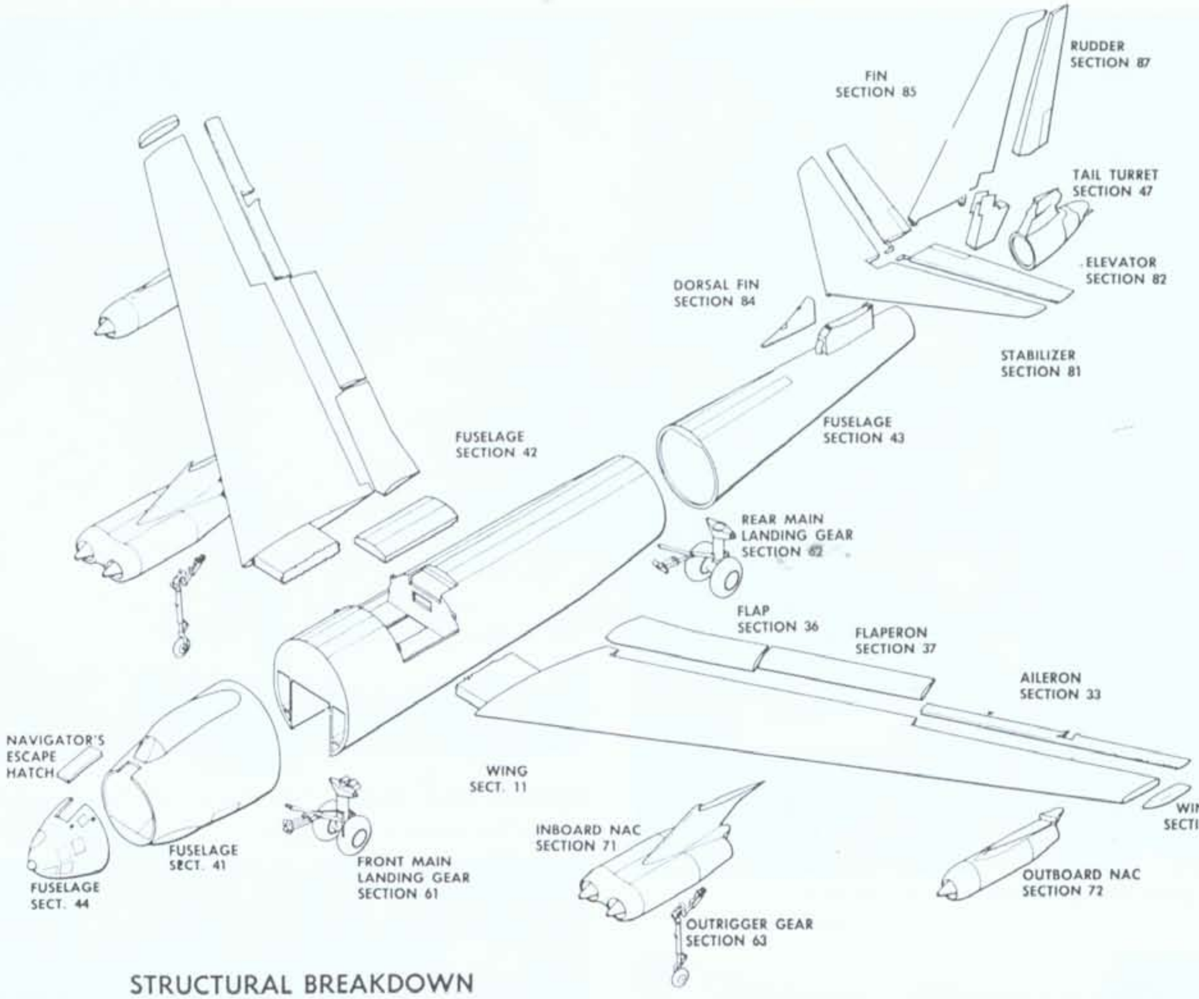


The approach chute pack and its pilot chute are being installed in the lower centerline compartment. (Boeing BW45708-5)

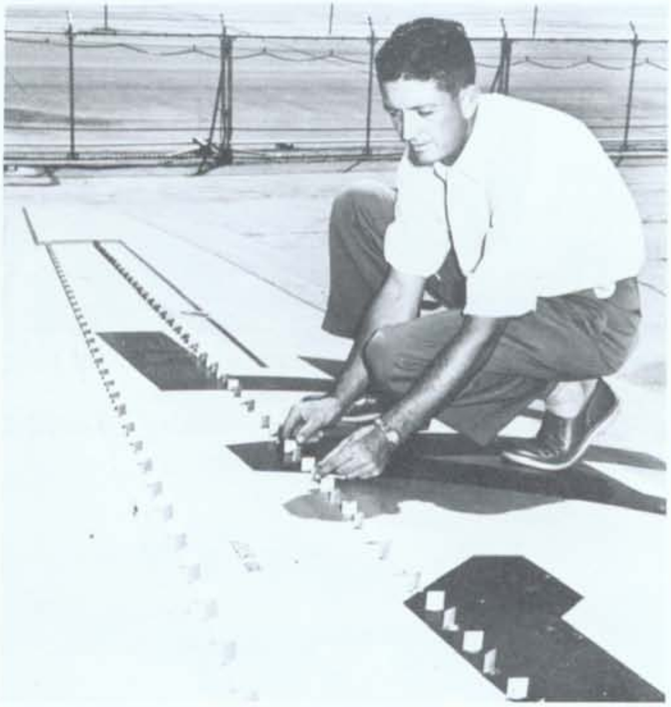


Both the smaller approach chute and the larger brake chute billow behind this B-47E-55-BW. Note the location of the compartments for each chute. (Boeing BW90785)

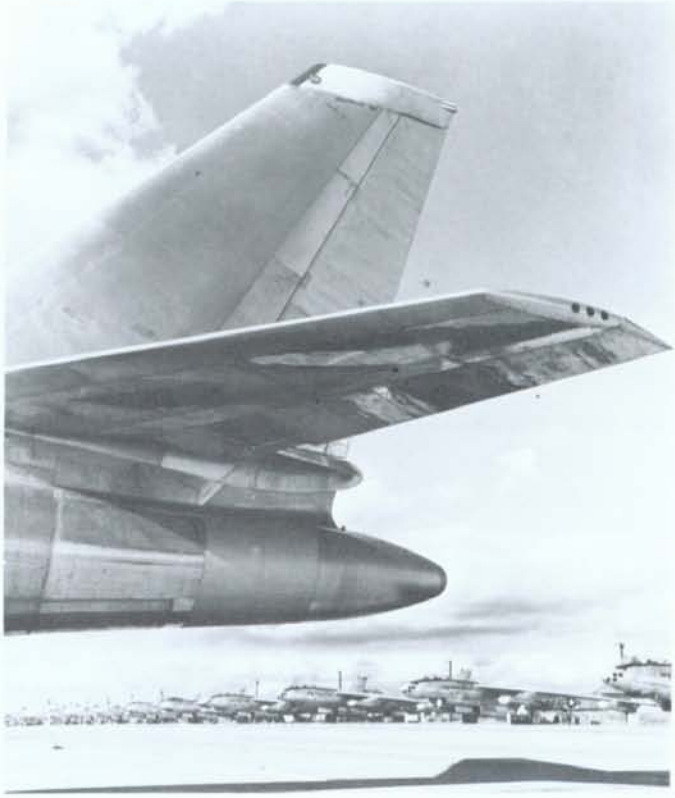
STRUCTURAL DETAILS



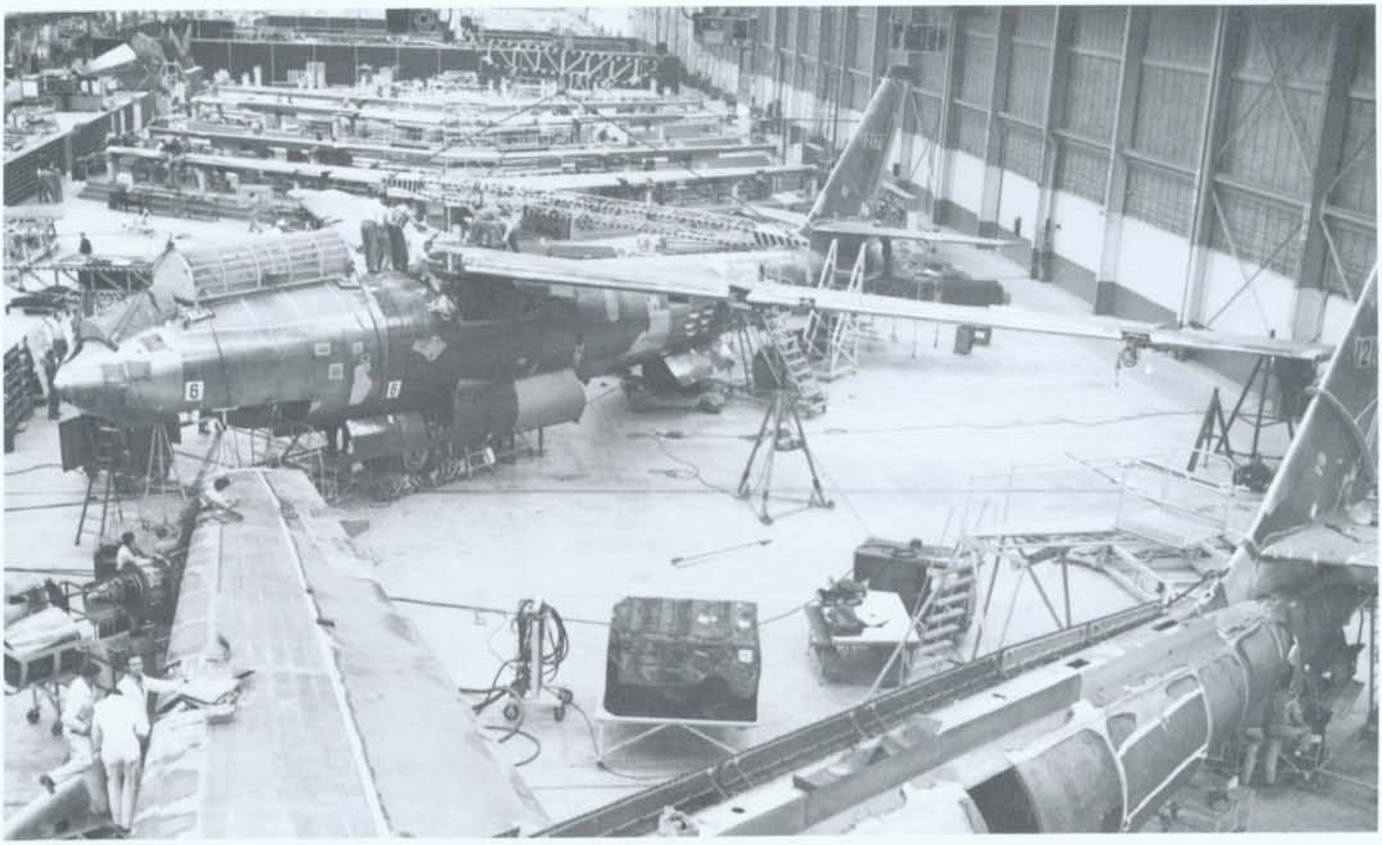
STRUCTURAL BREAKDOWN



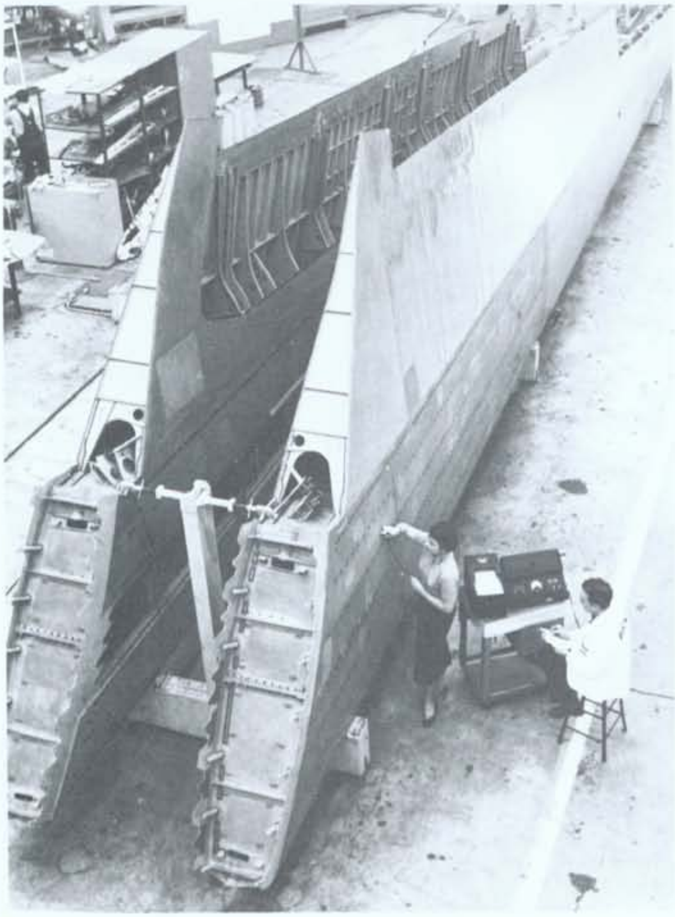
Vortex generators are being set in place on wing of a B-47. These small airfoils control the flow of air over the wing in order to keep the boundary layer close to the skin. The generators are placed in the area of the ailerons to assure that they operate effectively. (Boeing BW90409)



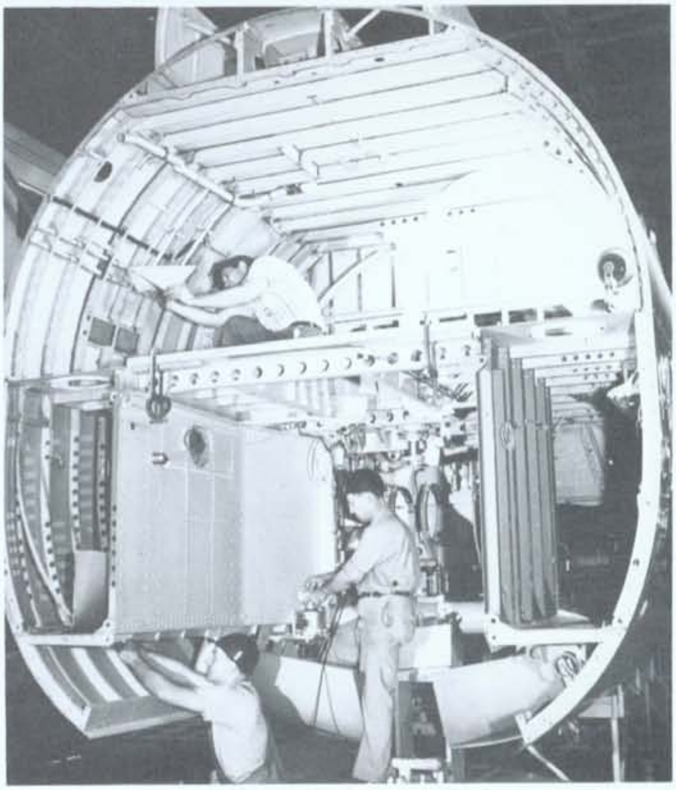
B-47B tail details prior to installation of defensive armament. (Boeing BW60235)



Last block of Douglas-built Stratojets, B-47E-65-DTs, on the assembly line. The wing lay down area may be seen to the rear. The raceway doors are open on the airplane in the foreground. (Douglas-Tulsa T3846)



A pair of wings with lower surfaces facing each other, reveal inboard rib and flap well details. (Boeing BW55971)



Low angle view of Body Station 329.28 showing forward wheel well sides and fuel tank deck floor. Control raceway doors are open on top of fuselage. (Boeing P10825)

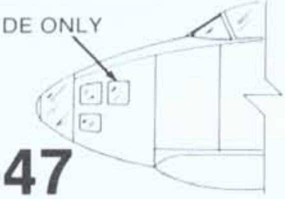
DIMENSIONS

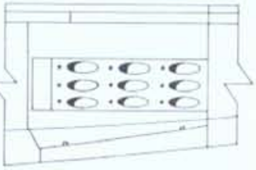
DIMENSION	ACTUAL	1/72nd SCALE
Wingspan	116 feet*	19.33 inches
Wing Root Chord	17 feet, 4 inches	2.89 inches
Wing Tip Chord	7 feet, 3.36 inches	1.21 inches
Aileron Span	27 feet, 9.2 inches	4.63 inches
Flaperon Span	15 feet, 8.4 inches	2.62 inches
Flap Span	16 feet, 7.5 inches	2.77 inches
Length	107 feet, 1.5 inches	17.85 inches
Height	28 feet	4.67 inches
Rudder Height	14 feet, 9.8 inches	2.47 inches
Horizontal Stabilizer Span	33 feet	5.5 inches
Horizontal Stabilizer Root Chord	11 feet, 5 inches	1.9 inches
MLG Tire Diameter	56 inches	.78 inches
Outrigger Tire Diameter	26 inches	.36 inches
Outrigger Gear Track	44 feet, 4 inches	7.39 inches
MLG Wheel Base	36 feet, 4 inches	6.06 inches

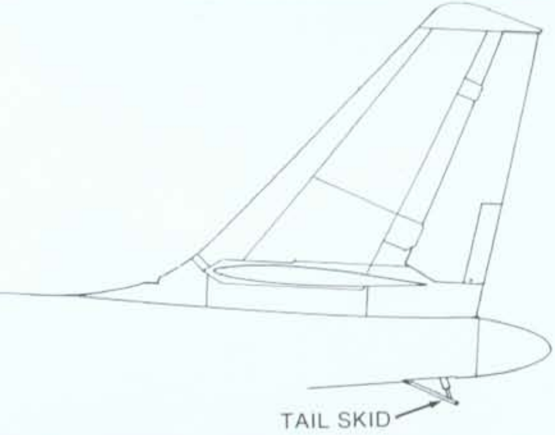
Wing Area	1428 square feet
Vertical Tail Area	227 square feet
Horizontal Tail Area	268 square feet

* 116 feet, 4 inches with Phase III ECM wing tips

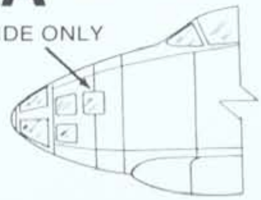
XB-47



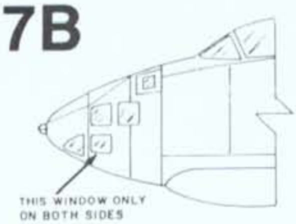

RATO PORTS WITH SMALL HOLES FOR IGNITERS

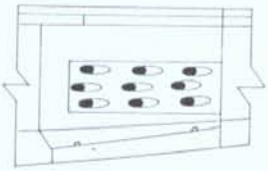


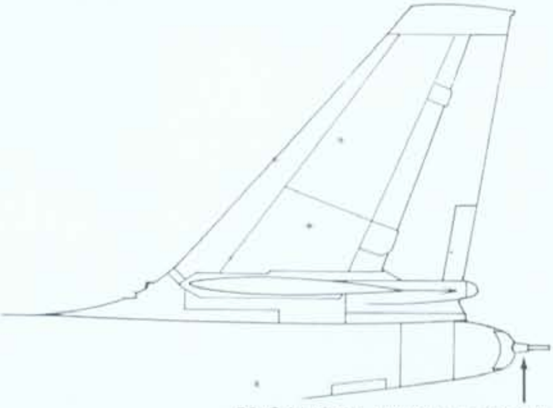
B-47A



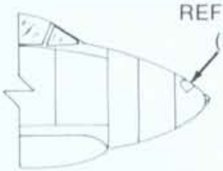
B-47B

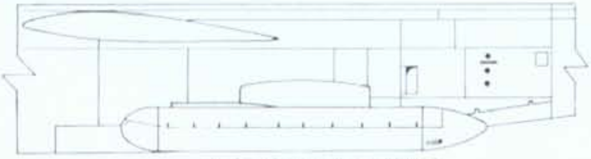


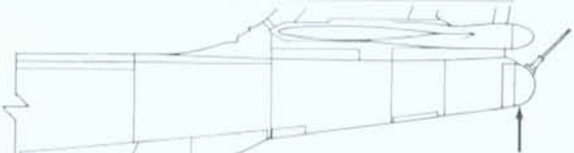

STAGGERED RATO PORTS



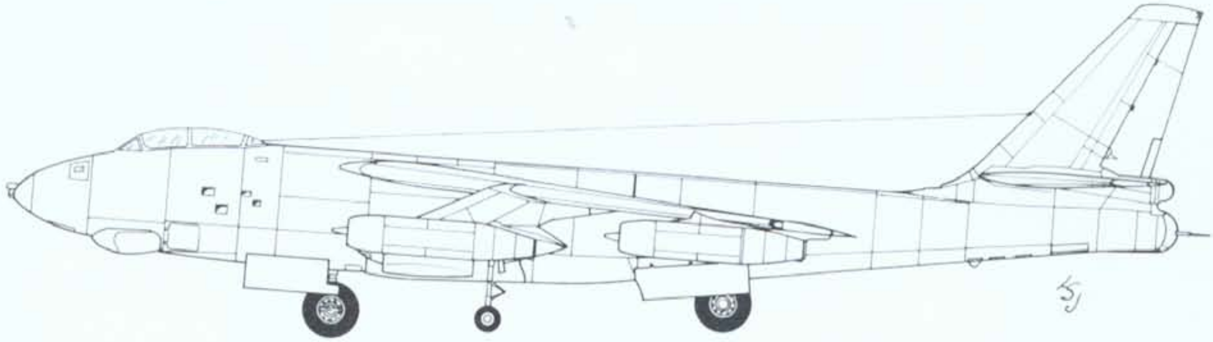
B-47E



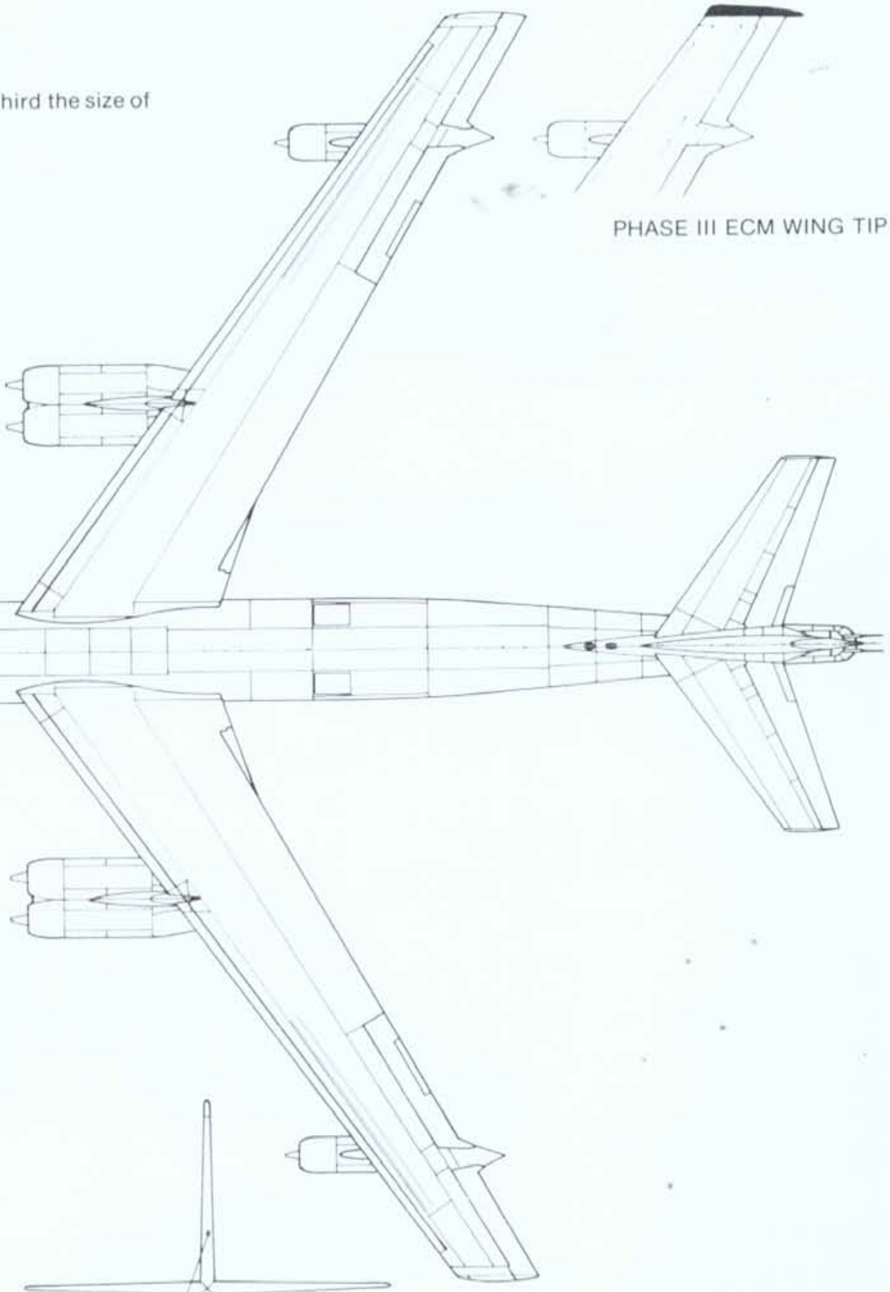




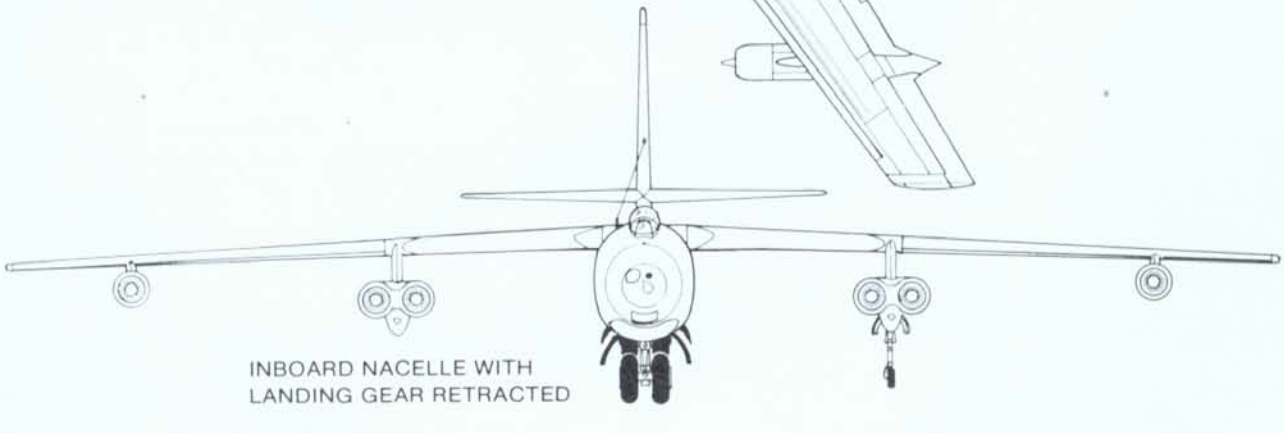
FIVE-VIEW SCALE DRAWINGS



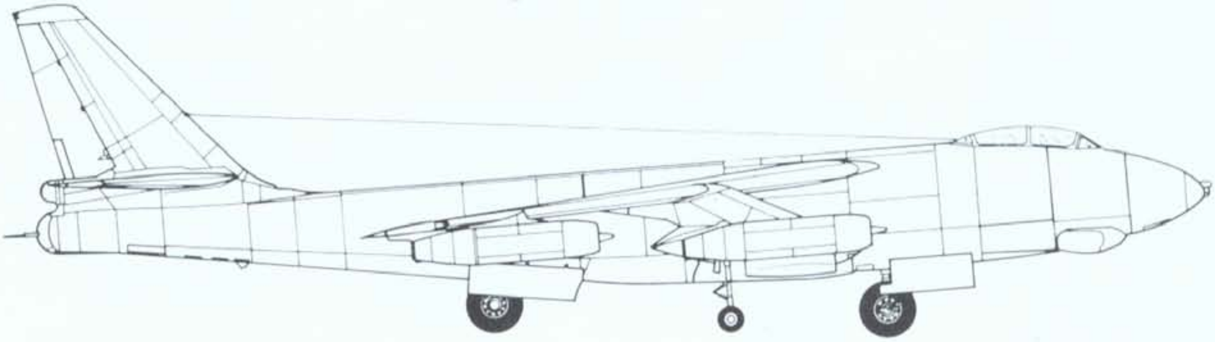
These drawings are 1/216th scale, or one-third the size of 1/72nd scale.

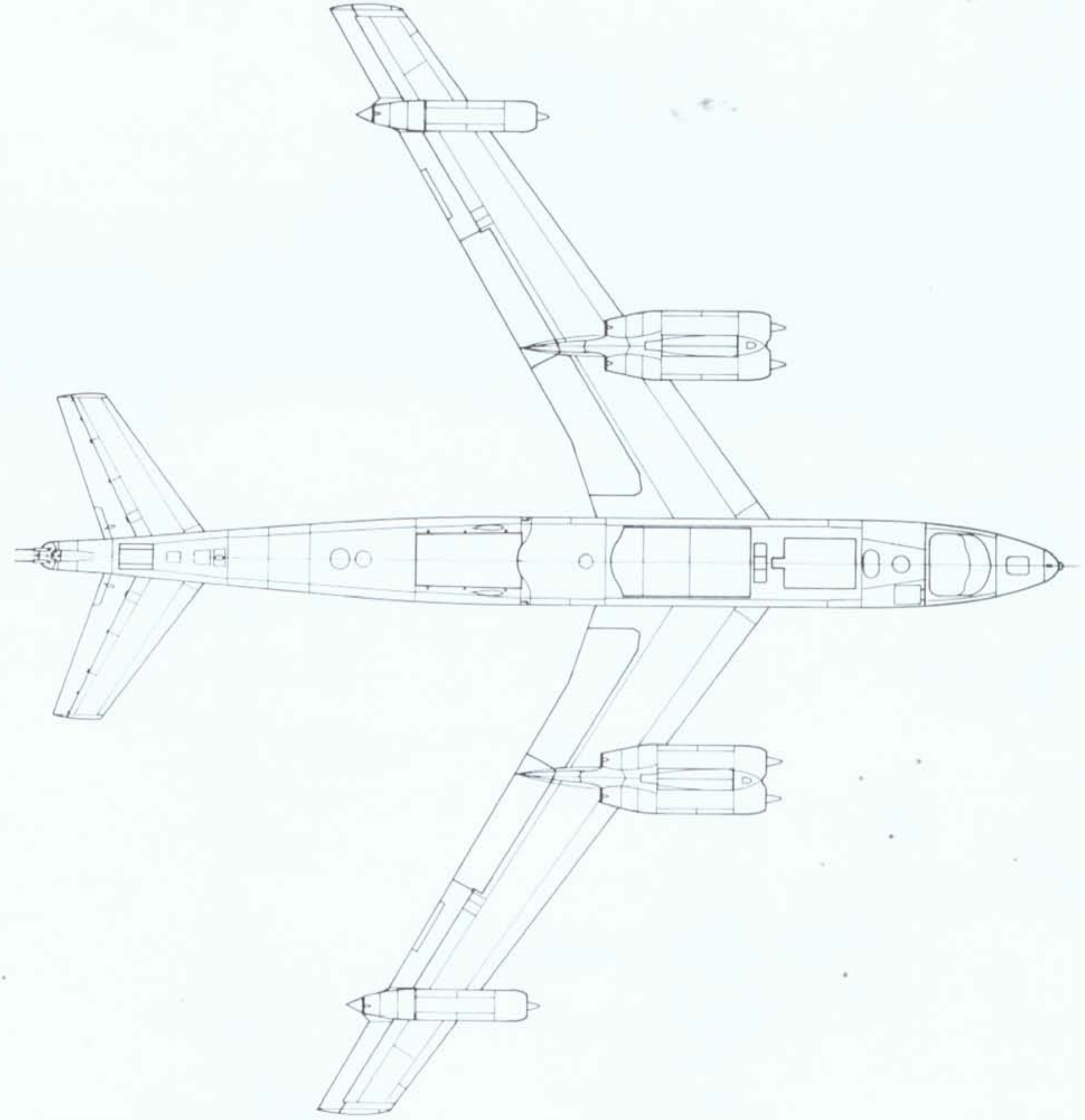


PHASE III ECM WING TIP

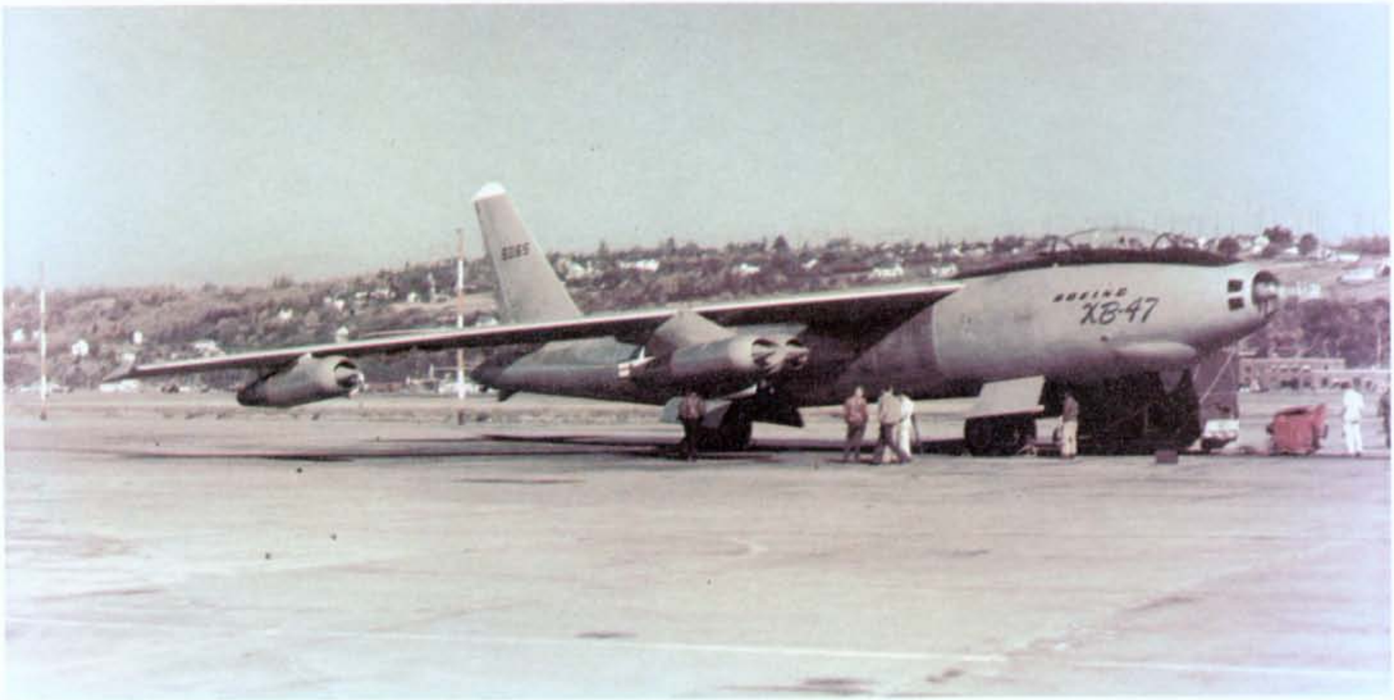


INBOARD NACELLE WITH LANDING GEAR RETRACTED

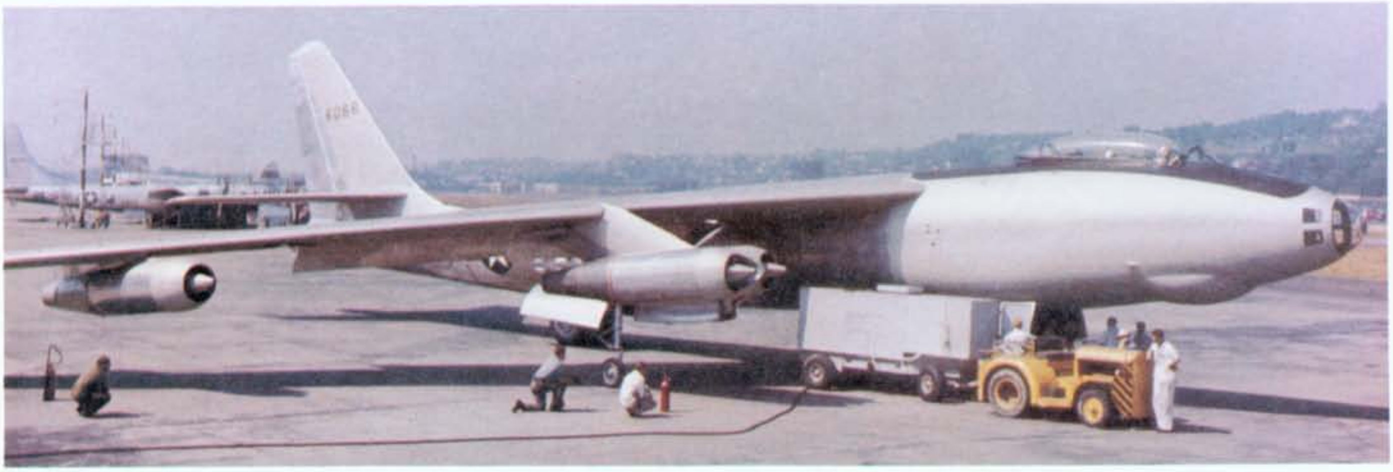




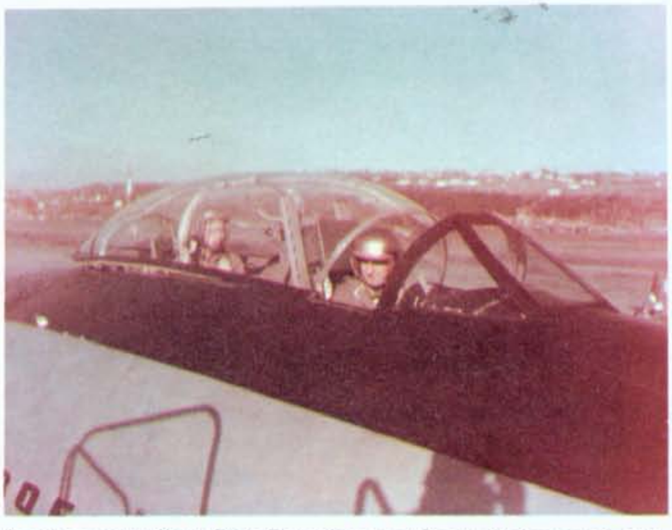
COLOR GALLERY



The first XB-47, 46-065 on Boeing Field. The tail skid is extended. *(Williams)*

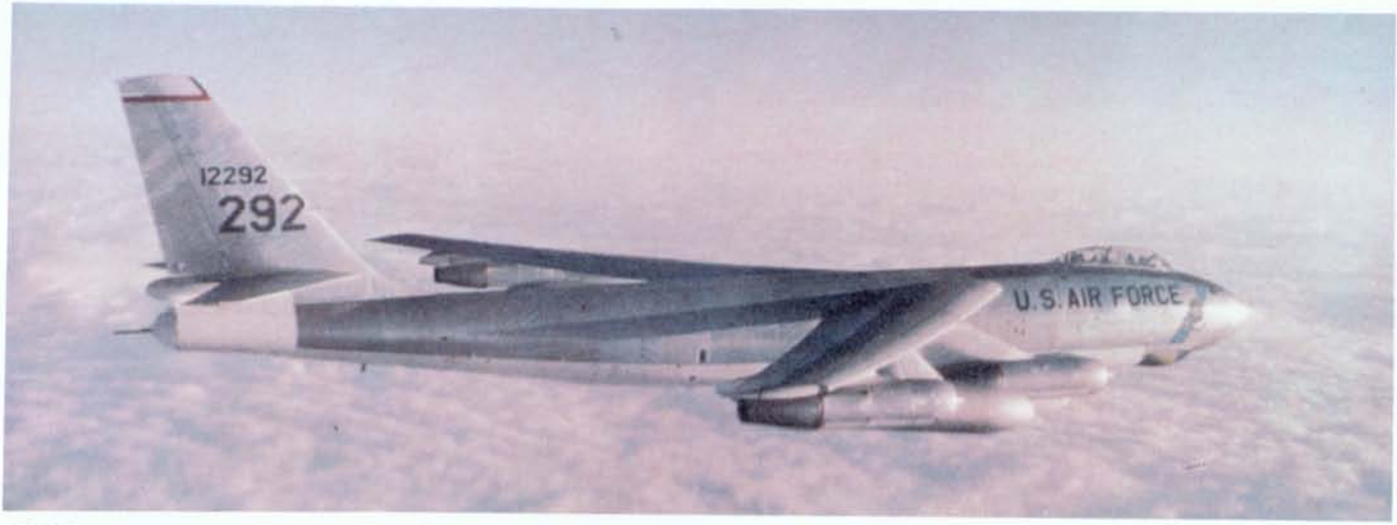


The second XB-47, 46-066, undergoing preflight checks on Boeing Field. Note the absence of the identifier on the nose. *(Williams)*

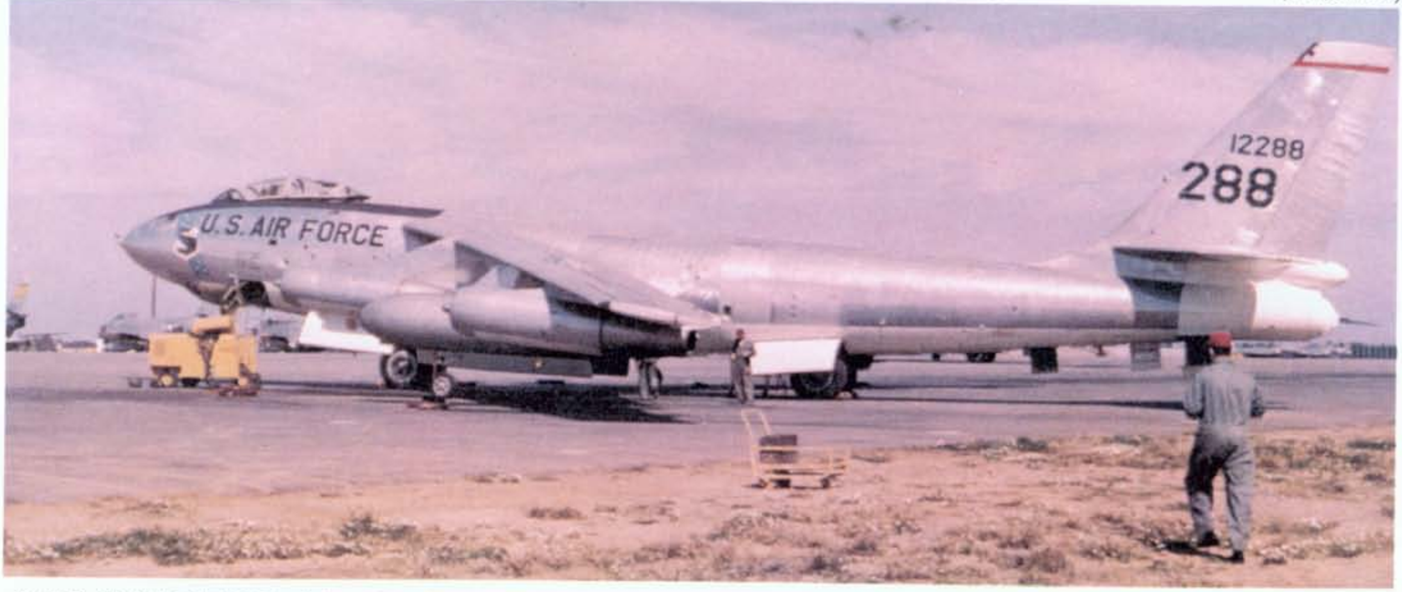


Boeing test pilots Bob Robbins and Scott Osler in 46-065. This sliding canopy would later kill Osler. *(Williams)*

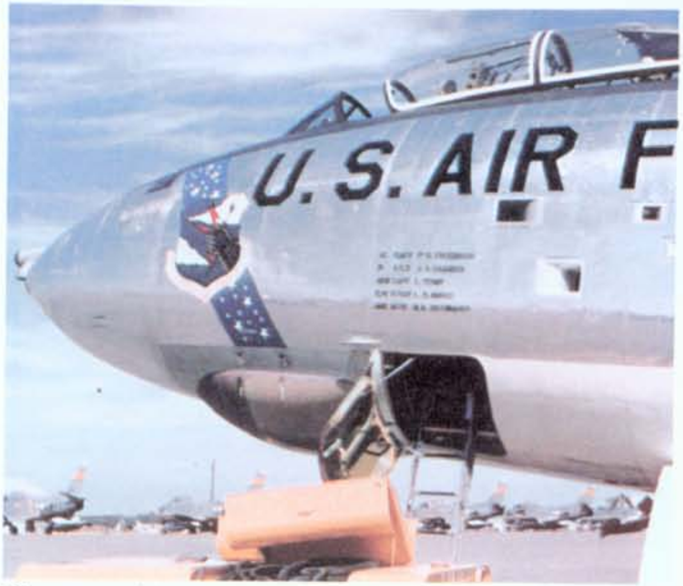
A pair of B-47As take off on a test flight. (Boeing K1578)



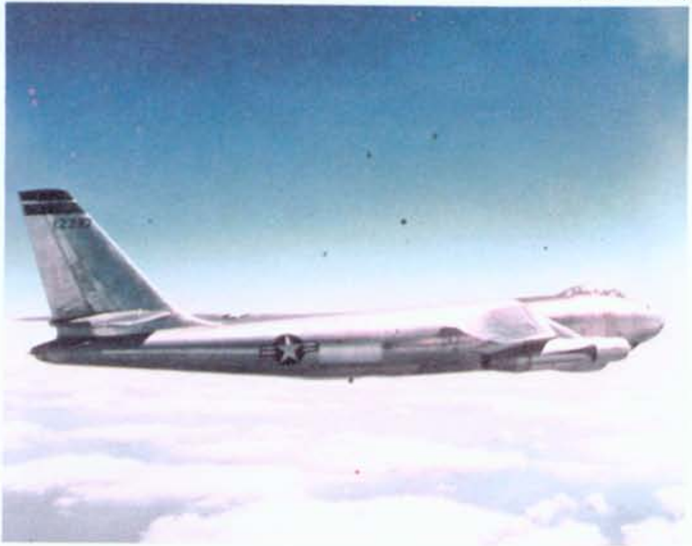
19th BW, B-47B-45-BW, 51-2292, is shown with a partial white belly and 20mm tail guns. *(Friedrich)*



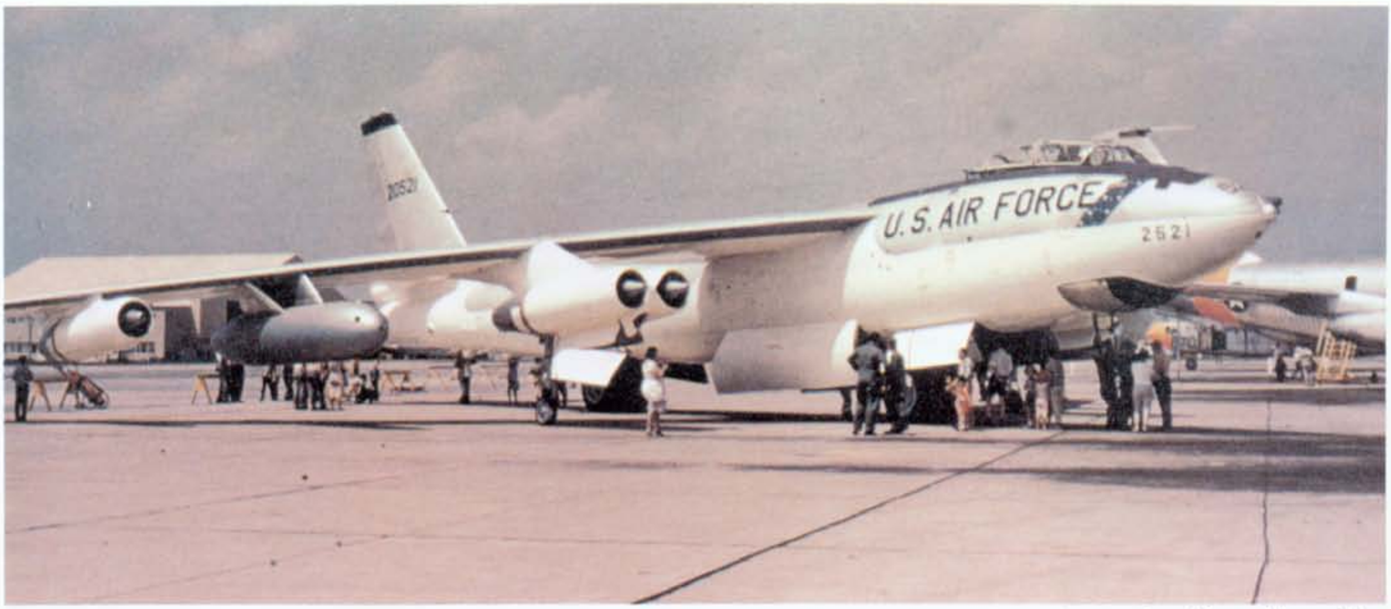
B-47B-45-BW, 51-2288 of the 19th BW. *(Friedrich)*



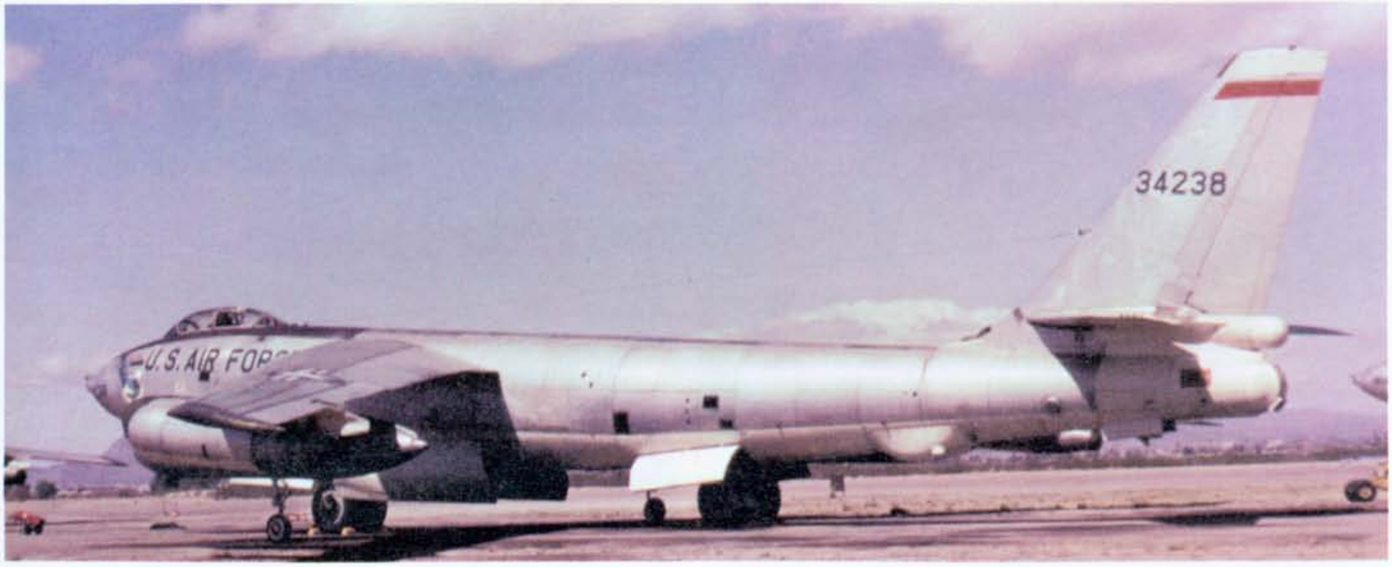
Close-up of the nose of 51-2288 showing crew names, entry hatch, and air conditioning system inlets and exhausts. *(Friedrich)*



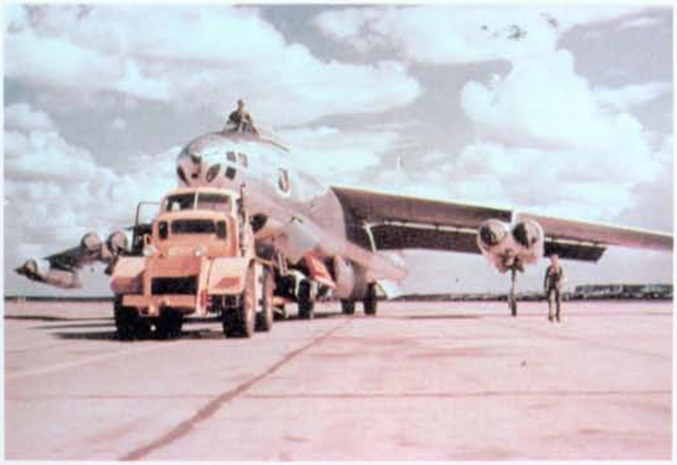
The first B-47B-45-BW, 51-2287, was assigned to the 306th BW, 369th BS, with the blue tail band. Internal RATO bottle mounts have been deleted. Early .50 caliber machine guns are in the tail. *(Johnson)*



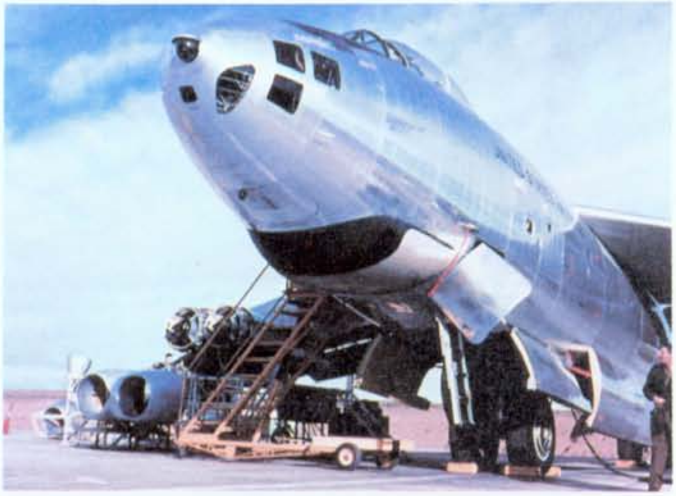
A full white belly is shown on B-47E-95-BW, 52-0521. Note the condensation of the tail number on the side and top of the nose. The fuel tank has silver paint. *(Graham via Menard)*



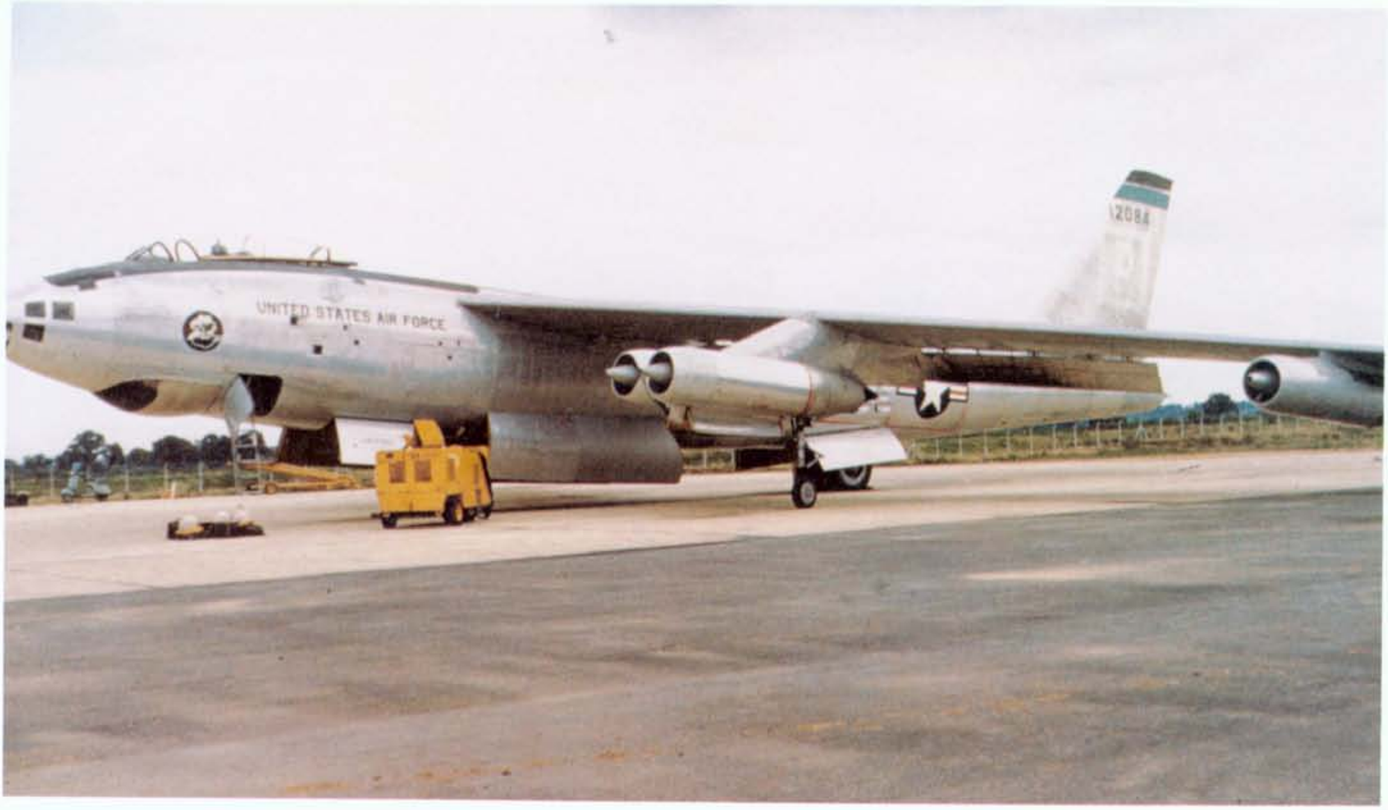
B-47E-130-BW at Davis-Monthan AFB with Phase III ECM gear in the belly. *(Williams)*

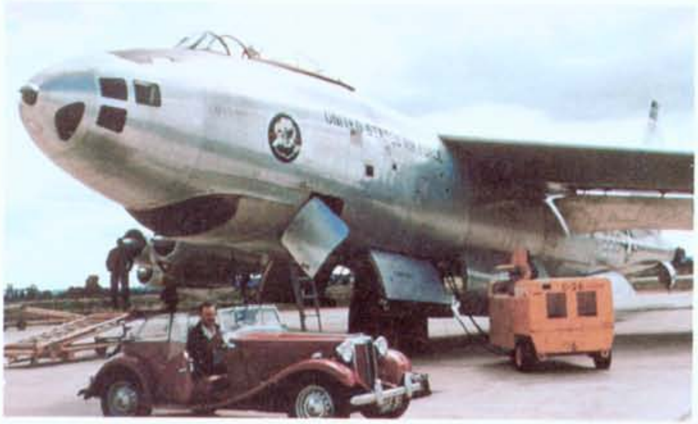


The last four digits of the serial number, 51-5239, appear on the forward gear door of this 44th BW B-47E-65-BW. The number 40 high on the nose was a plane-in-group number to assist in refueling operations. *(USAF K9421)*



Early nose windows carried through to this B-47E-75-BW, 51-7082. The zinc chromate on the wheel well and bomb bay doors are evident in this view. *(Williams)*

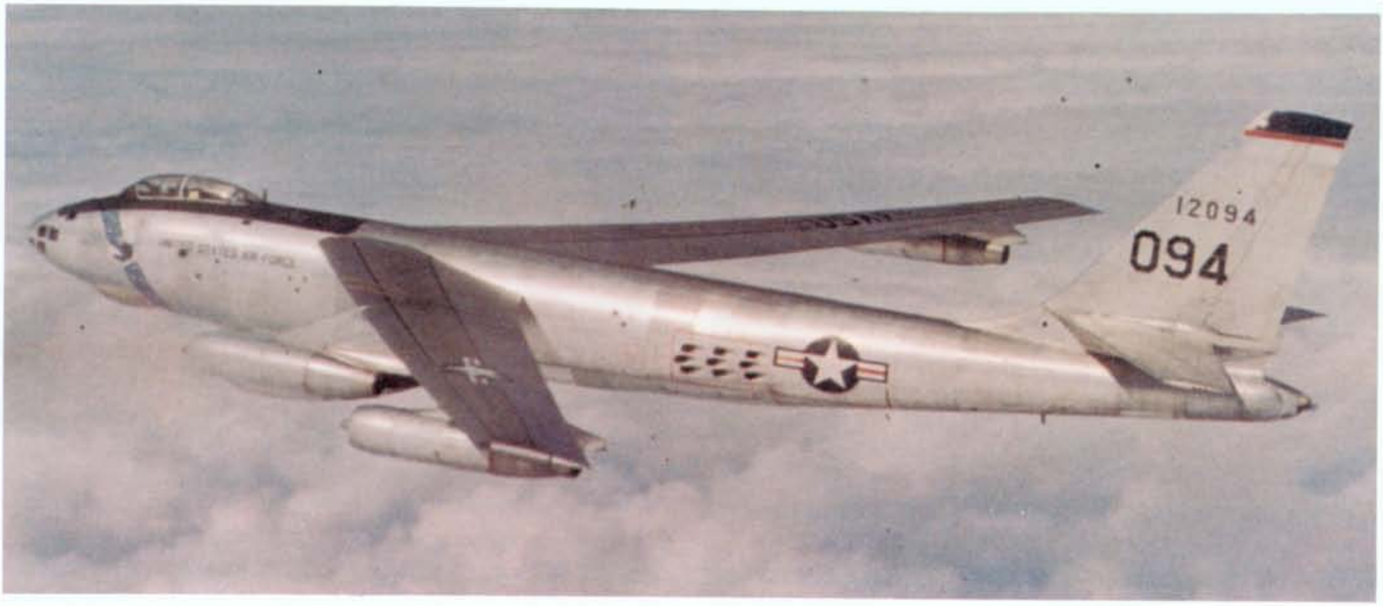


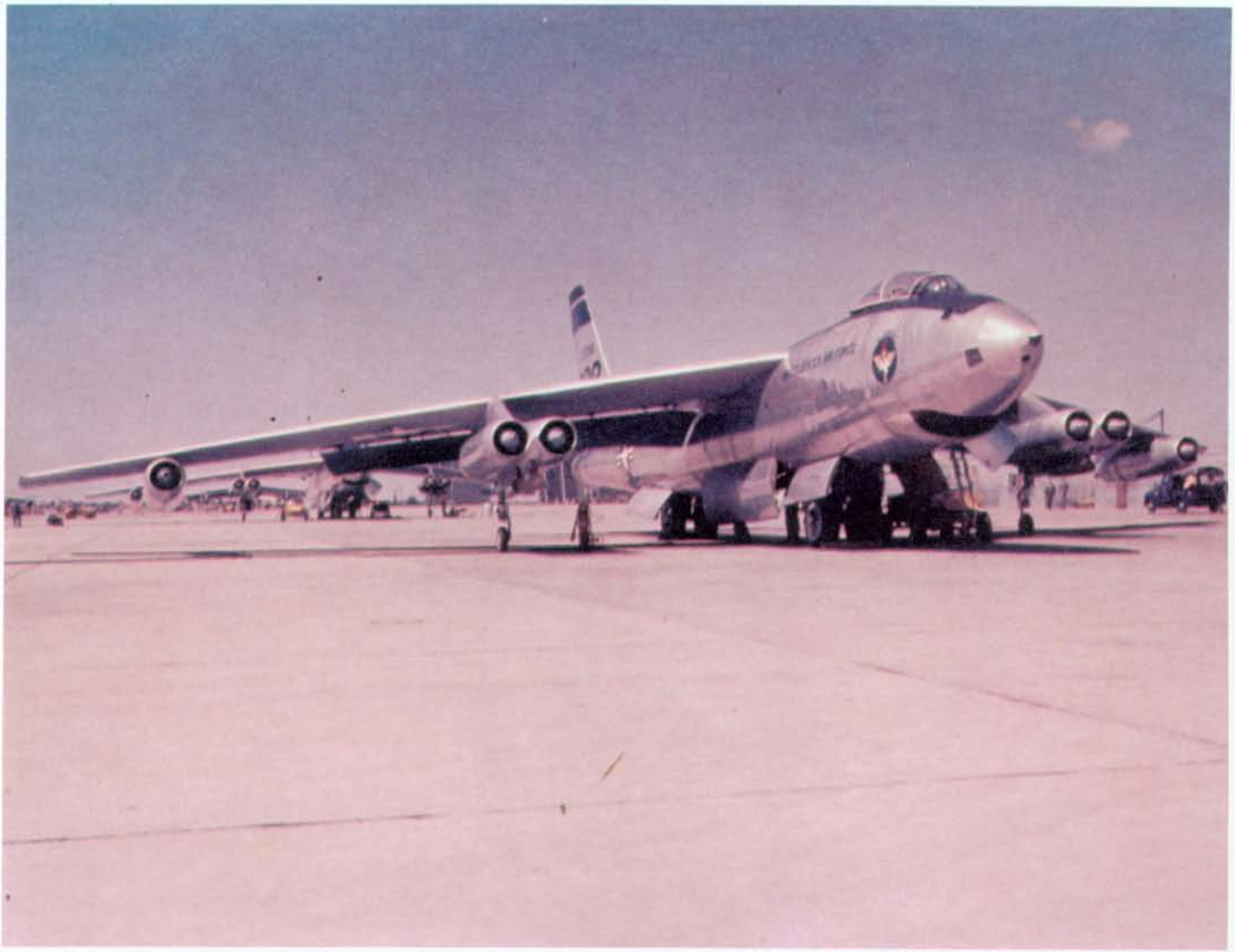


Above: 51-2094 is seen while serving with the 306th BW, 364th BS, with the blue tail band. The scars of the old Square P remain on the vertical tail. *(Johnson)*

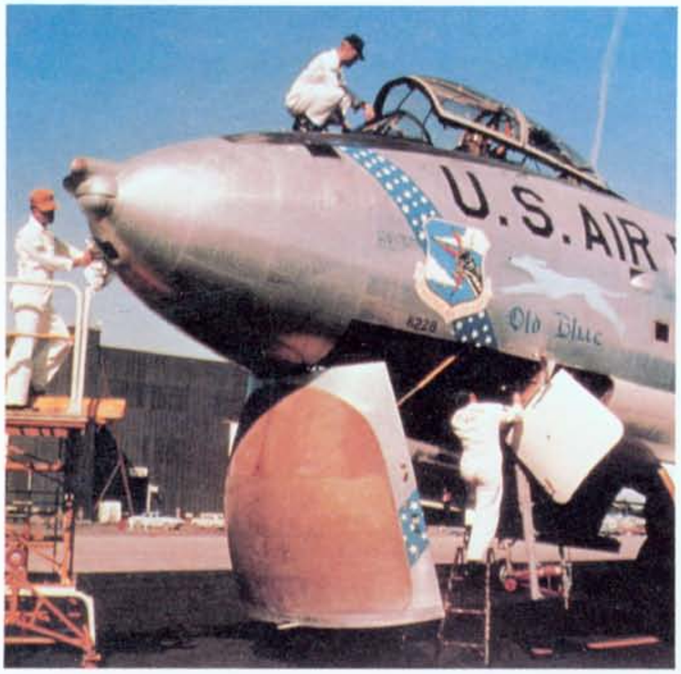
Left: Nose detail of the same aircraft shows the 369th BS, ***Fight 'n 'bitin'****, insignia. The early nose window arrangement is evident.* *(Johnson)*

Below: 51-2094 later served with the 19th BW, and retains the .50 caliber guns for defensive armament. Scars from the earlier 306th BW markings are visible after the tail number was lowered and the tail stripe was changed. The last three digits of the tail number, enlarged on the fin, were common for a time. *(Friedrich)*



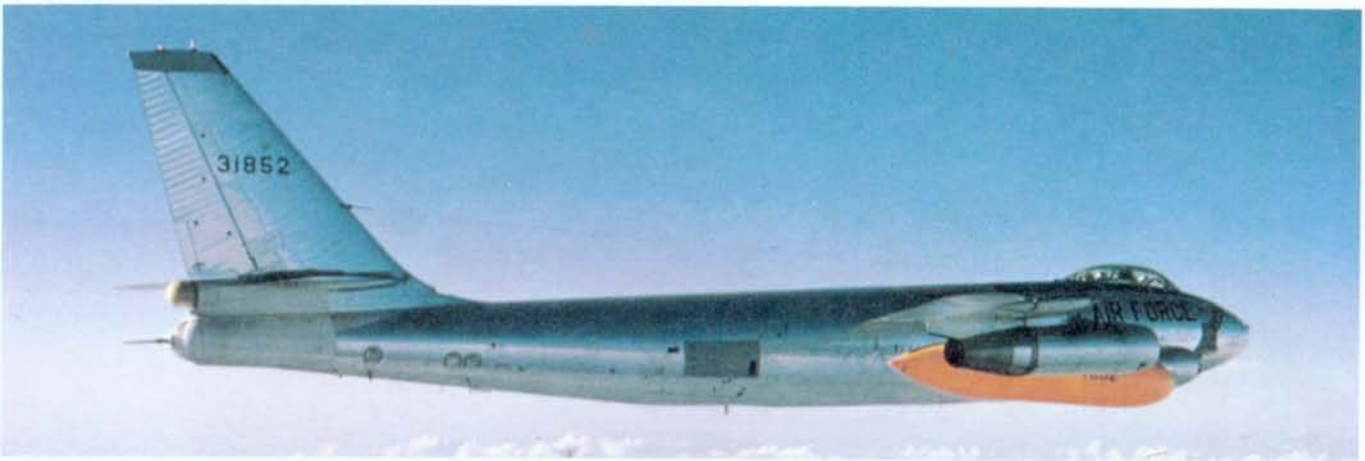


This TB-47B-30-BW, s/n 51-2098, was assigned to the flying training wing at McConnell AFB, Kansas. A large 098 appeared in black below the tail number. *(USAF K9326)*

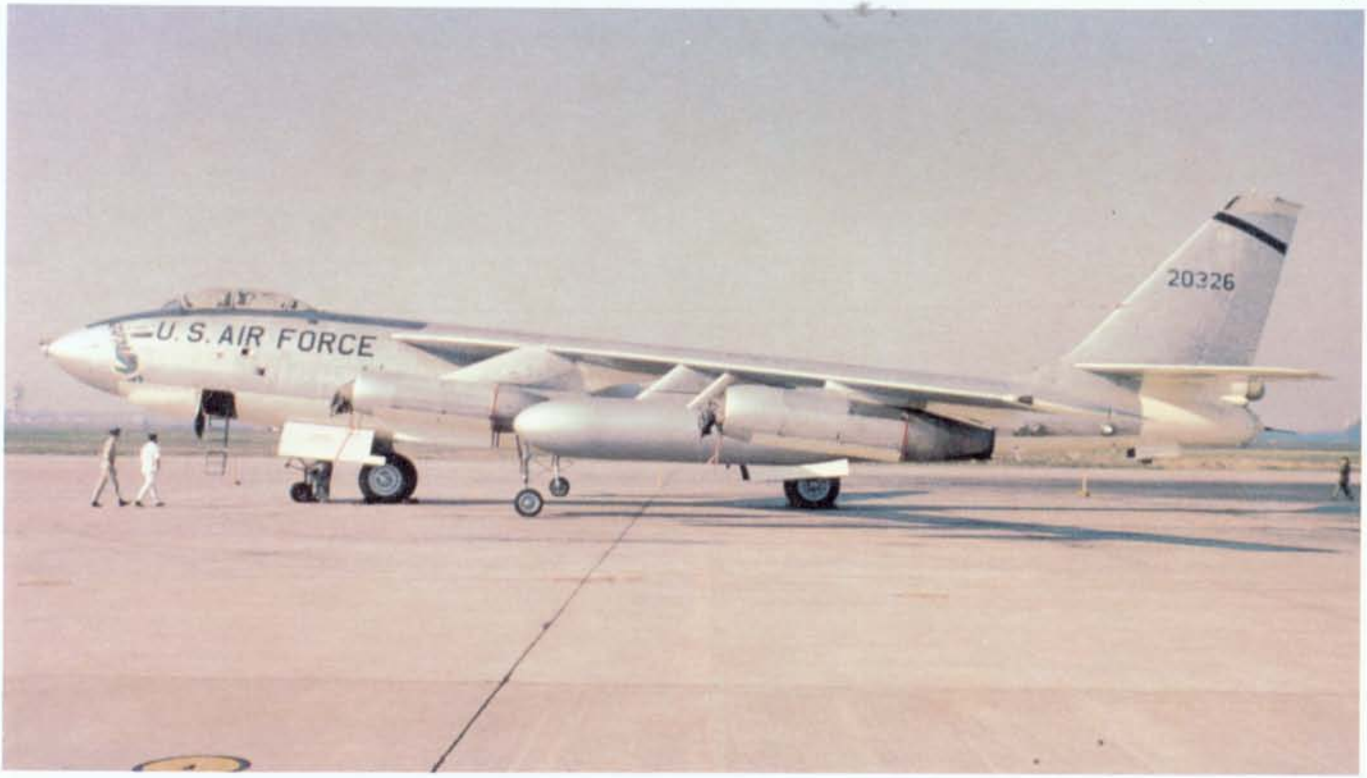


Old Blue *was a B-47E-135-BW, s/n 53-6228, assigned to the 310th BW.* *(USAF K17734)*

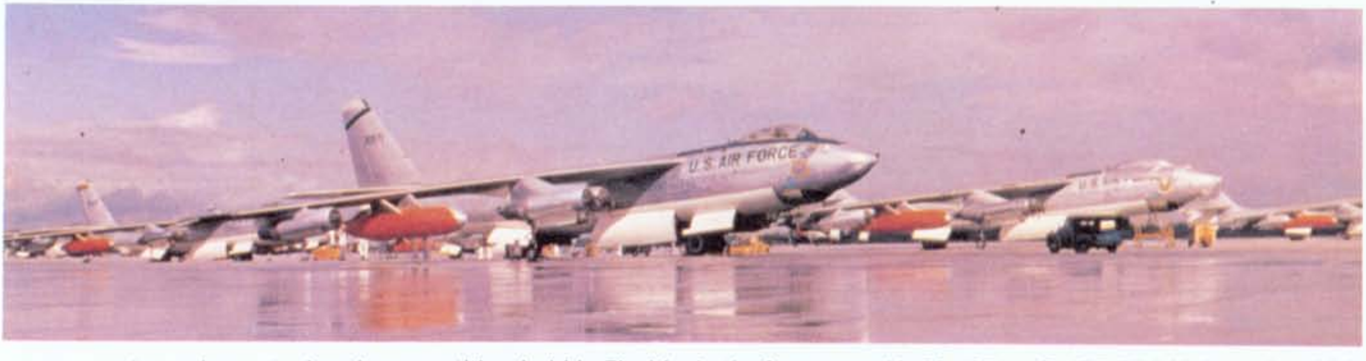
9th BW B-47E revealing its armament loading placard. *(McAtee)*



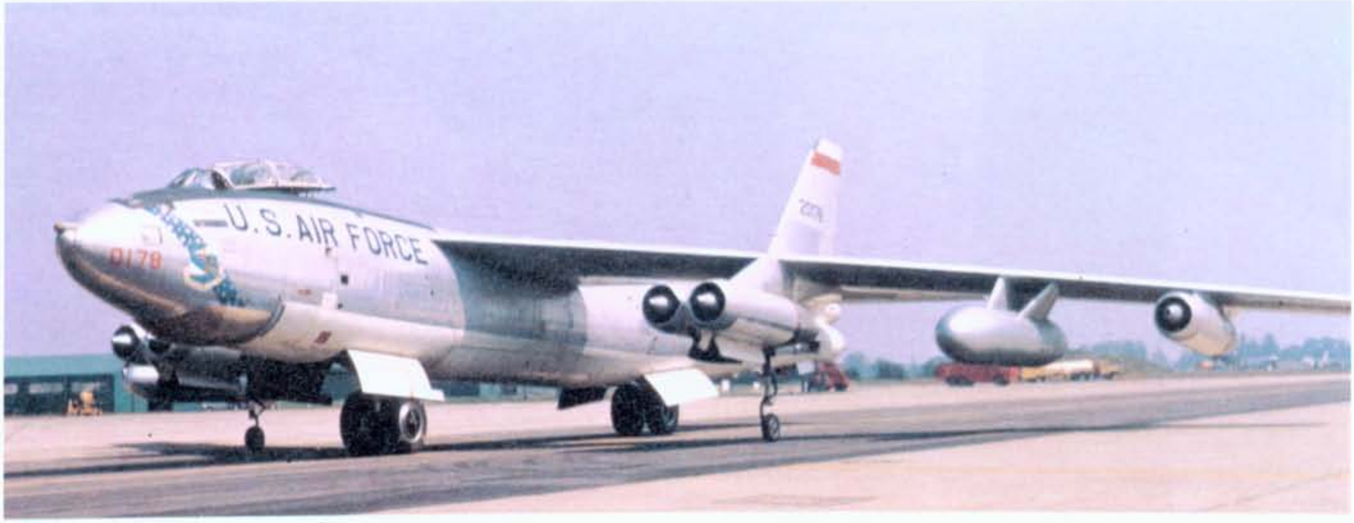
B-47E-30-LM, 53-1852, of the 97th BW, circa 1960. The last four digits of the tail number appear on the outboard portion of the day-glo orange fuel tank. Phase II ECM gear is mounted on the aft fuselage. No squadron tail colors are carried.
(Komarnitsky)



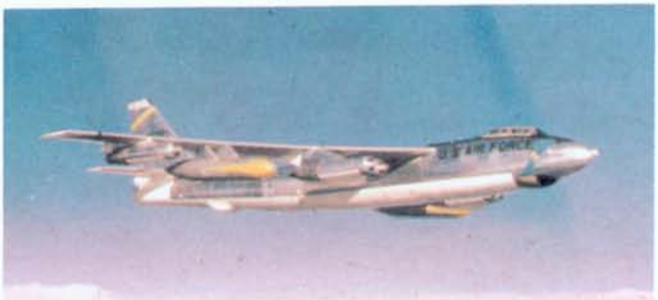
B-47E, 52-326, of the 100th BW is shown as it appeared on May 15, 1965. The ejection seat triangle and rescue placard may be seen on the nose. This Pease AFB-based aircraft was photographed at McGuire AFB. (Miller via Menard)



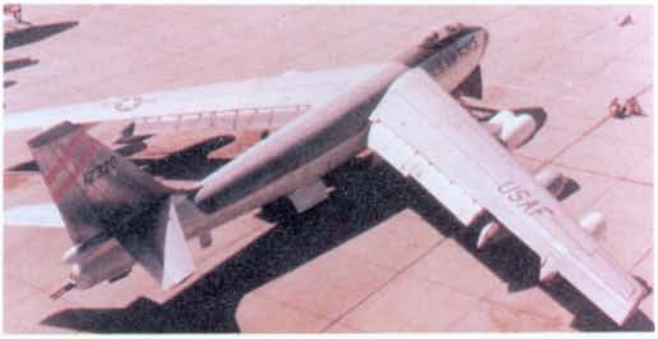
B-47s are shown here at a bomb competition held in Florida. In the foreground is 53-1971, a B-47E-75-LM, from the 100th BW. The aircraft with the canopy covered was assigned to the 509th BW. (USAF K17736)



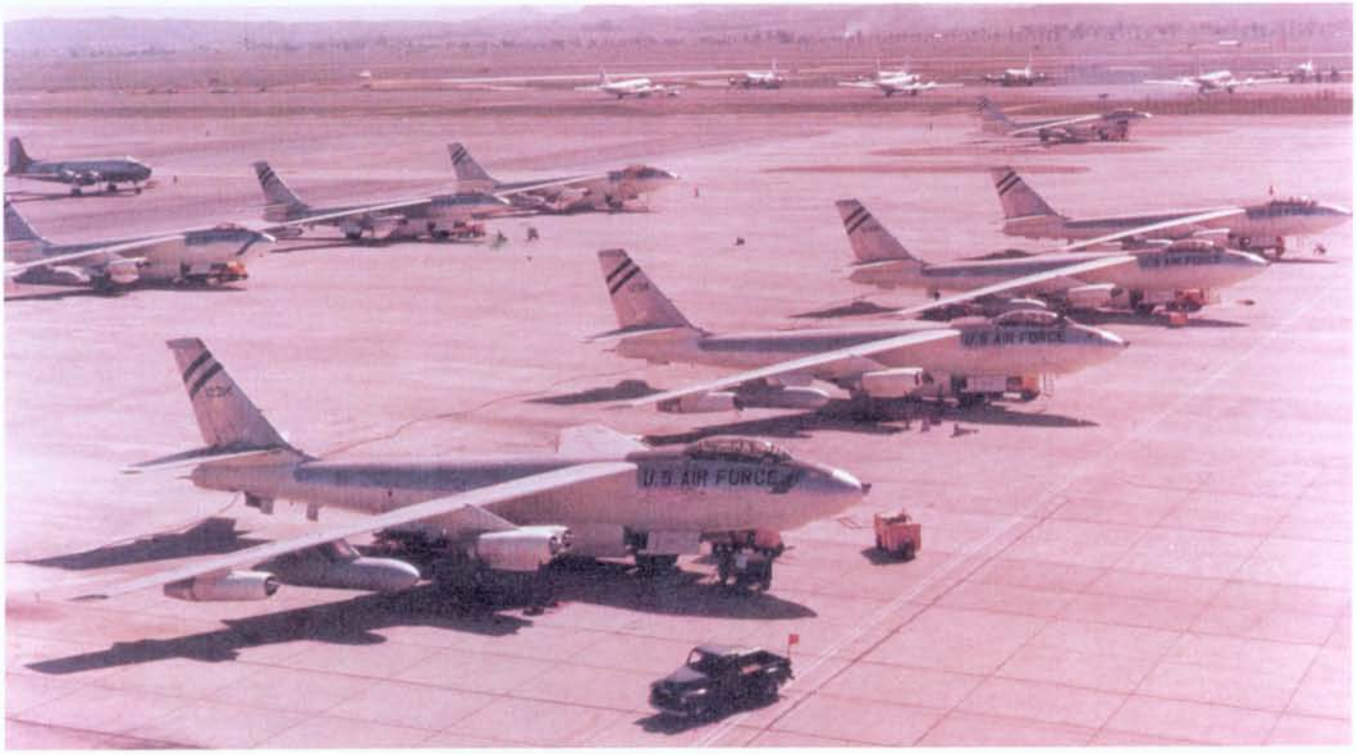
B-47E-30-DT, 52-0178, of the 384th BW, 546th BS, is photographed with a red tail band. This aircraft also carried a red nose number. Rescue and ejection seat placards were carried on this aircraft. The large last three digits of the tail number were painted over with silver paint. *(Baker)*



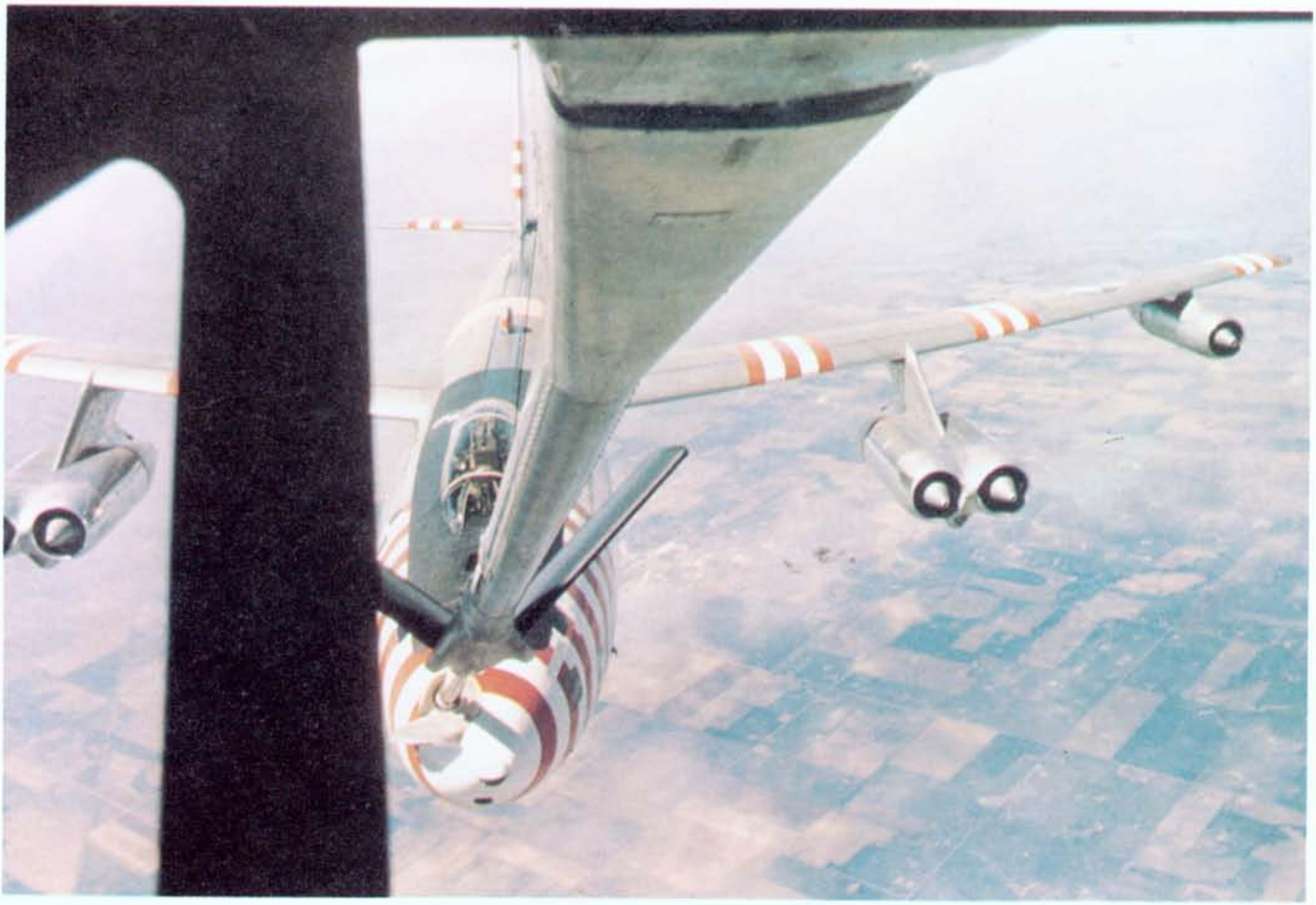
51-2327 was a B-47B-50-BW, operated by the 381st BS, 310th BW, Smokey Hill AFB, Kansas. The aircraft has Phase III ECM installed. *(Ohlson)*

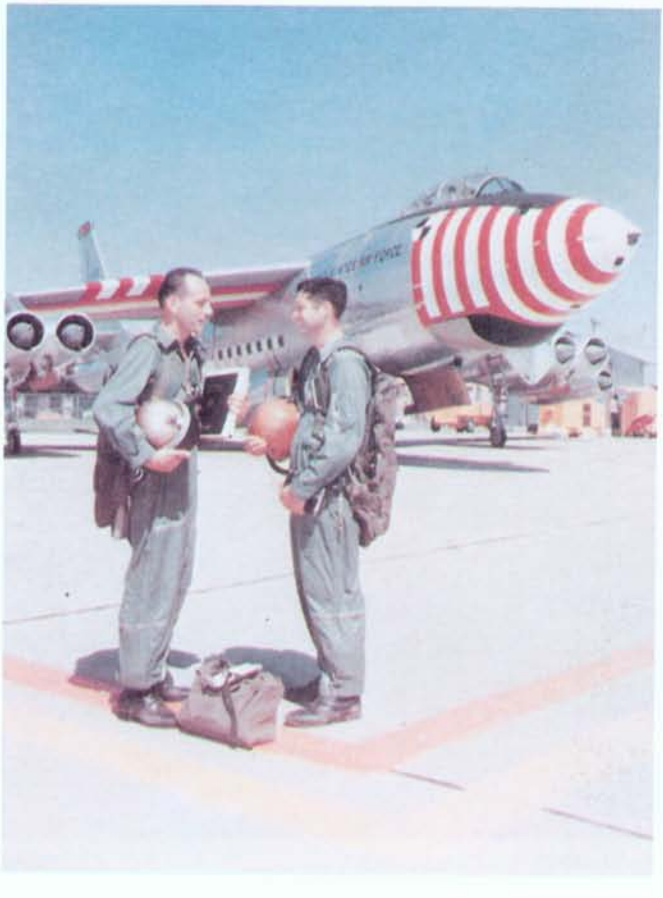


Red tail stripes denote the 320th BW, 441st BS. Note the flaperon and flap details. *(Williams)*



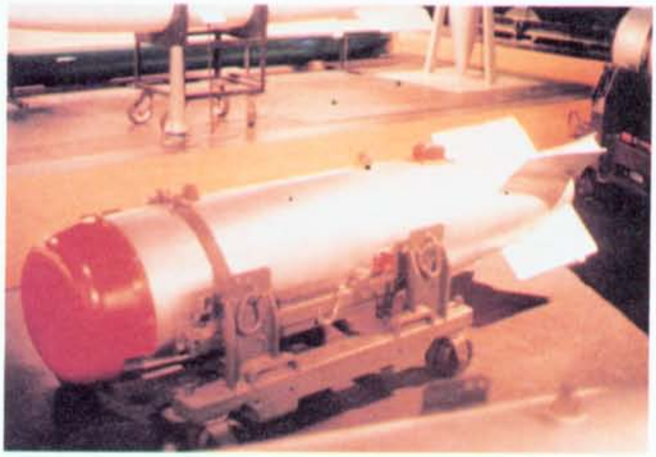
Blue tail bands adorn B-47s of the 320th BW, 443rd BS, at March AFB. *(Williams)*





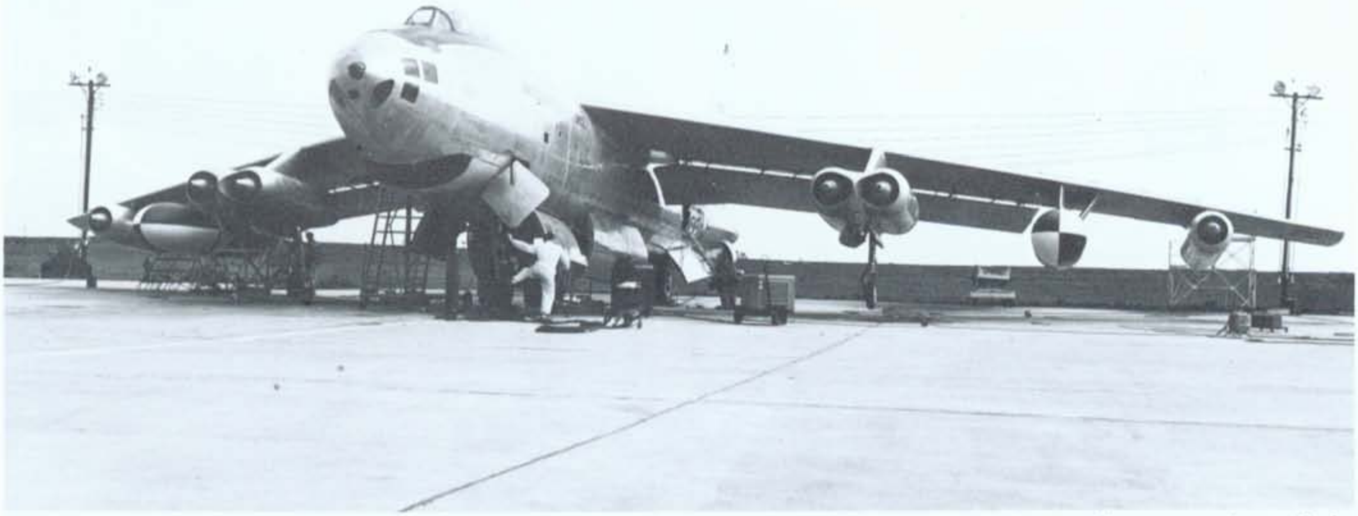
Above: Candy stripes on the upper surfaces of 51-7069 are revealed in this view taken from a tanker. This was a bomb toss test aircraft. *(Boeing Wichita)*

Left: Boeing test pilots Jack Funk (left) and Dick Taylor discuss the mission in front of 51-7069. *(Boeing K3633)*

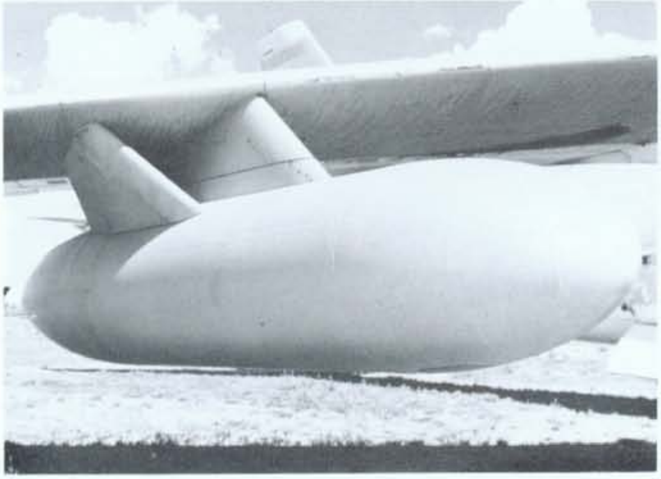


The reason that the B-47 beat out its competitors was that it could carry the "special purpose" bomb. This Mk 28 atomic bomb had a 1.1 megaton yield and could be carried in the bomb bay of a B-47. This picture was taken at the National Atomic Museum, Kirkland AFB, New Mexico. *(Baker)*

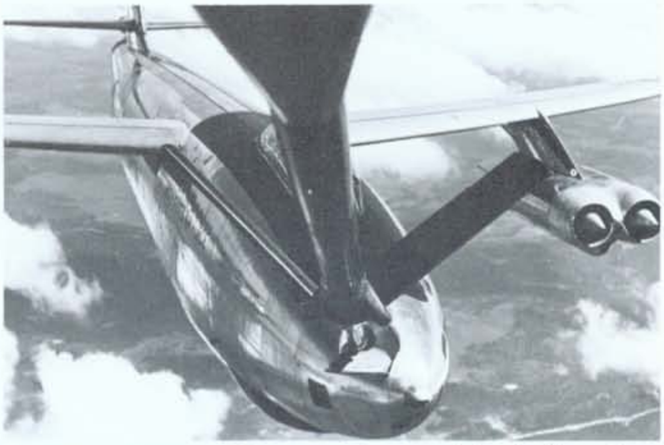
FUEL



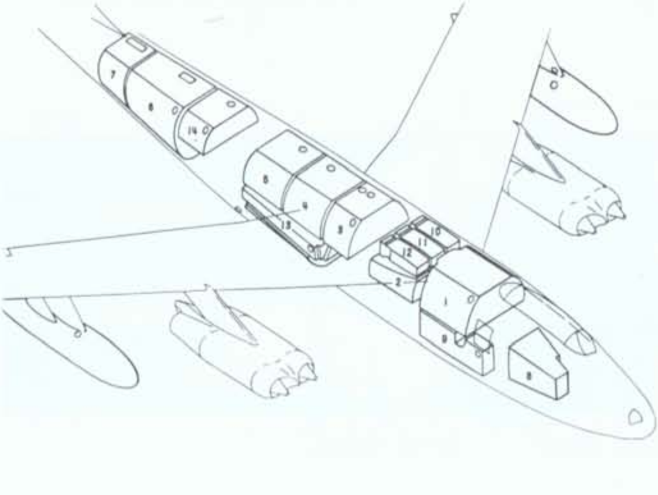
1,700-gallon drop tanks were installed on B-47B-1-BW, s/n 49-2642. The black and white markings were to assist in photographing the drop tests. *(Boeing BW60103)*



External fuel tank installation showing main strut and sway brace. A parachute extraction system was employed to drop the tanks. *(Kinzey)*



Further range extension came from aerial refueling. Here the Boeing-developed flying boom system is seen in operation. The boom nozzle fits into a receptacle behind the slipway door on the receiver aircraft. *(Boeing BW90055)*

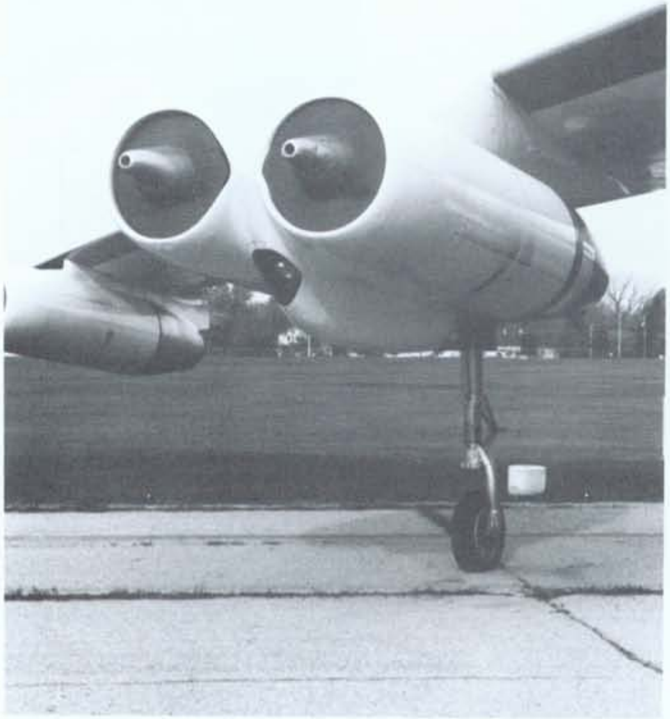


FUEL SYSTEM TANKS

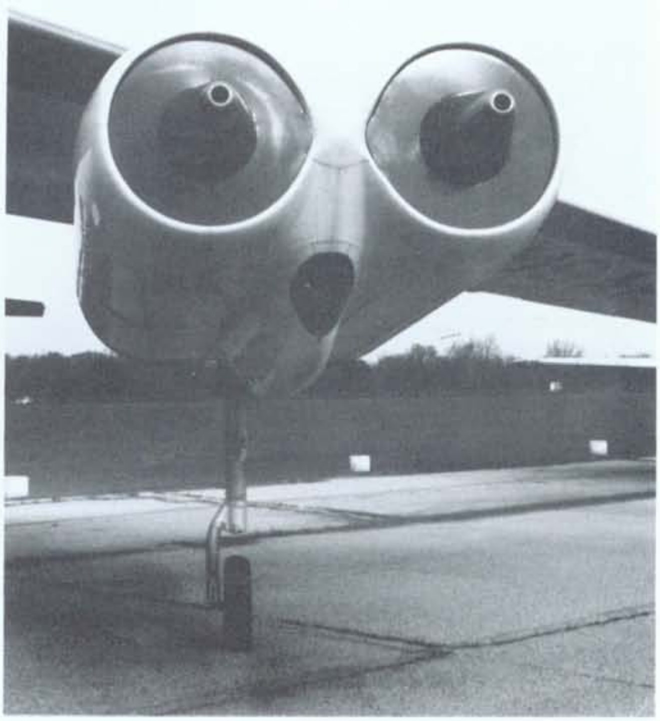
Name	AF Serial No.
1. Forward Cell of Forward Main Tank	49-2642 & on
2. Aft Cell of Forward Main Tank	49-2642 & on
3. Forward Cell of Center Main Tank	49-2642 & on
4. Center Cell of Center Main Tank	49-2642 & on
5. Aft Cell of Center Main Tank	49-2642 & on
6. Forward Cell of Aft Main Tank	49-2642 thru 51-2136 51-2137 & on
7. Aft Cell of Aft Main Tank	49-2642 & on
8. Forward Auxiliary Tank	49-2642 & on
9. Center Auxiliary Tank	49-2642 & on
10. Center Cell L. H. of Forward Main Tank	49-2642 thru 50-082 51-2045 & on
11. Center Cell Center of Forward Main Tank	49-2642 thru 50-082 51-2045 & on
12. Center Cell R. H. of Forward Main Tank	49-2642 thru 50-082 51-2045 & on
13. Bomb Bay Tank	49-2642 thru 49-2646 50-001 through 51-2311 51-2312 & on
14. A. T. O. Tank	49-2642 thru 50-055 50-056 through 51-2311 51-2312 & on

Fuel tank installation diagram.

ENGINES



Right inboard engines as viewed from the front left. Note the landing light and gear. *(Kinzey)*

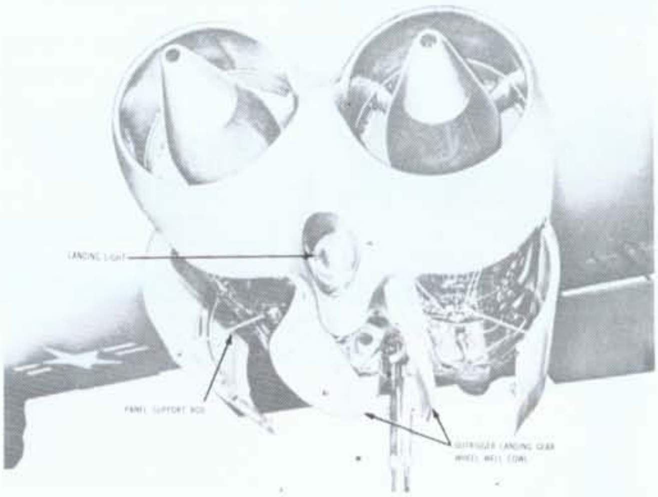


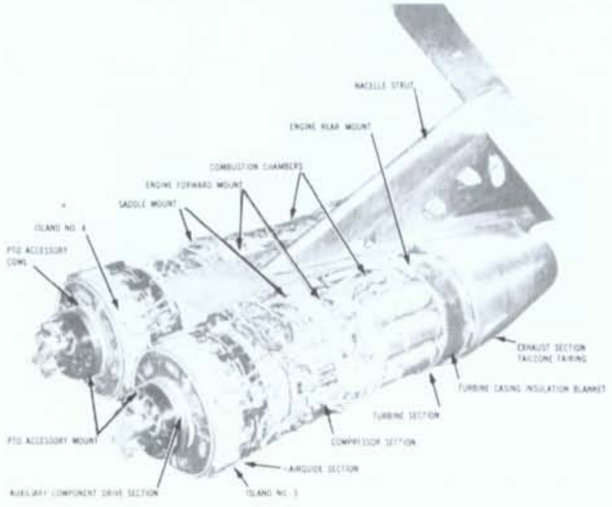
Left inboard engines as seen from the front. *(Kinzey)*

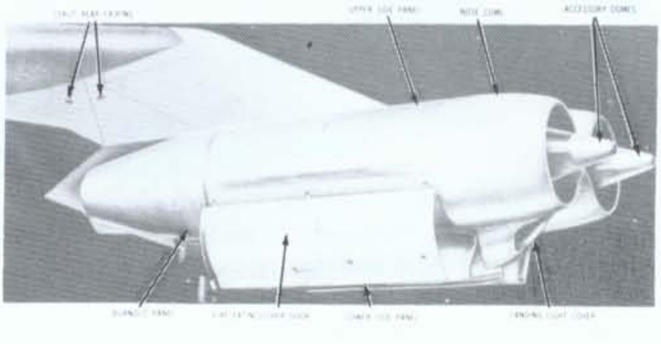
The following powerplants were installed on the B-47:

Airplane	Type	Takeoff Static Thrust (pounds/engine rpm)
XB-47	J35-GE-7	3750/7700
	J35-GE-9	3750/7700
B-47A	J47-GE-11	5200/7950
B-47B	J47-GE-23	5910/7950
B-47E	J47-GE-25	5970/7950
		7200/7950*
B-47E II	J47-GE-25A	5970/7950
		7200/7950*

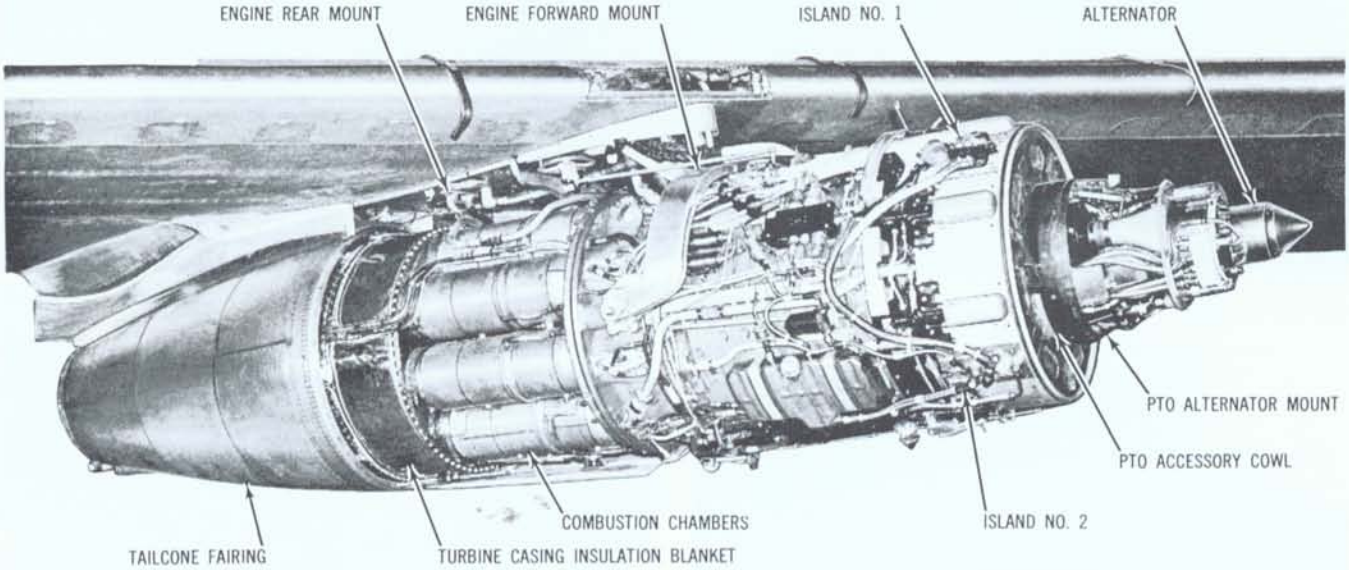
* Additional thrust with water injection

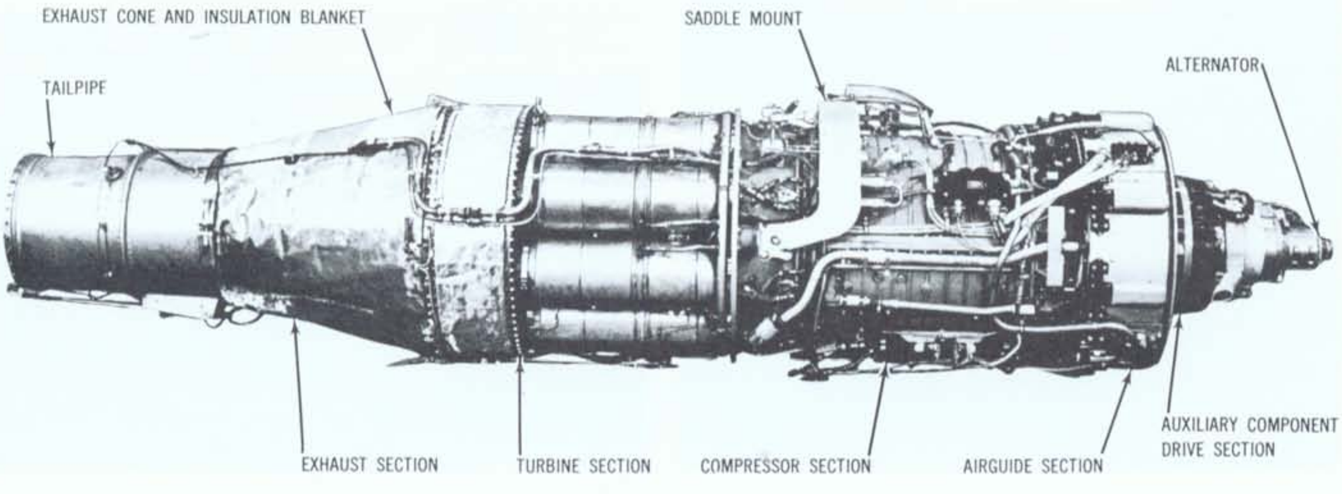




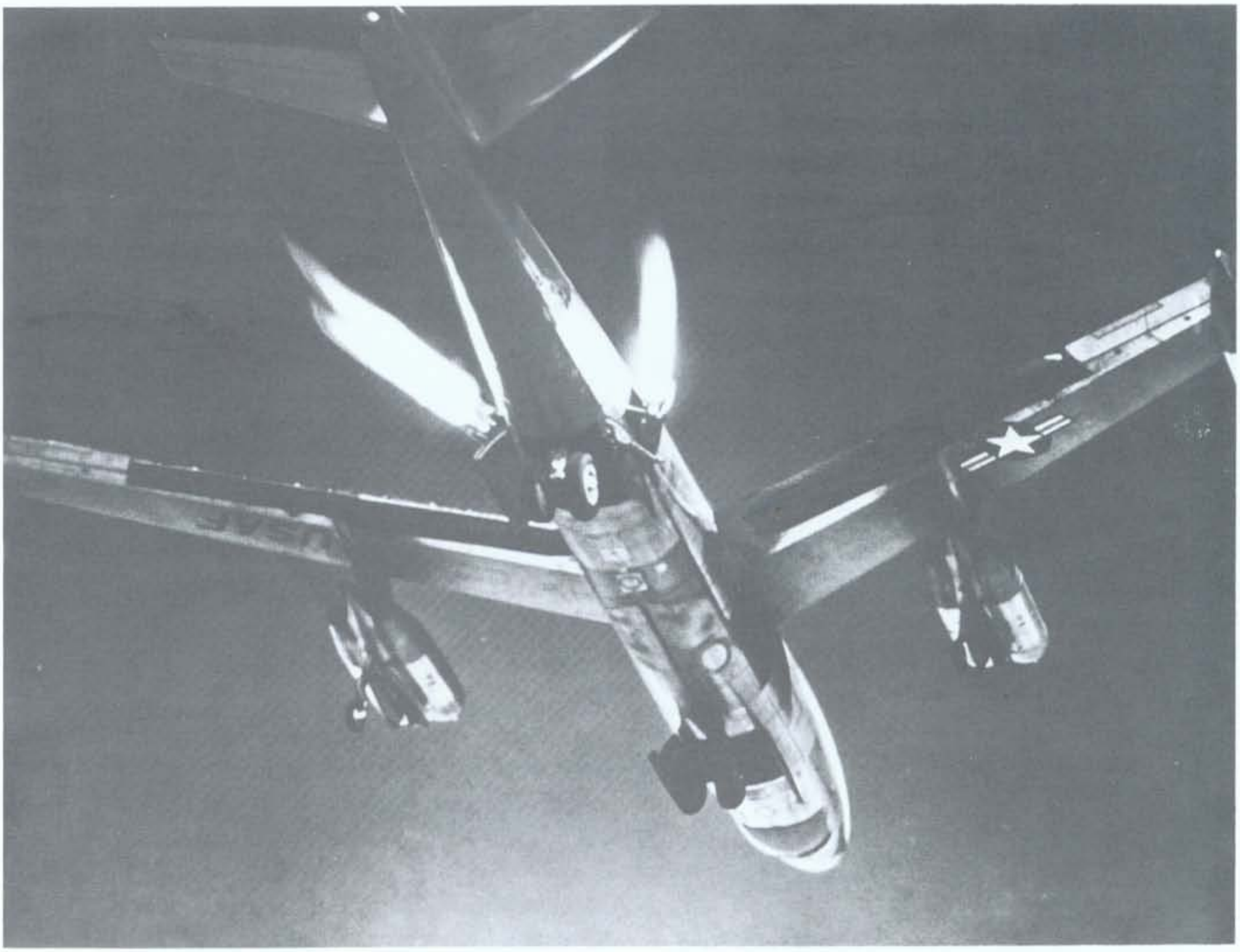


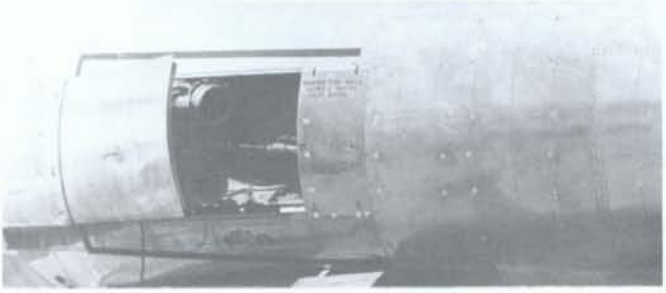
Inlet close-off doors shown in the closed position on the left outboard engine. *(Boeing P11056)*





AEROJET GENERAL LIQUID ROCKET



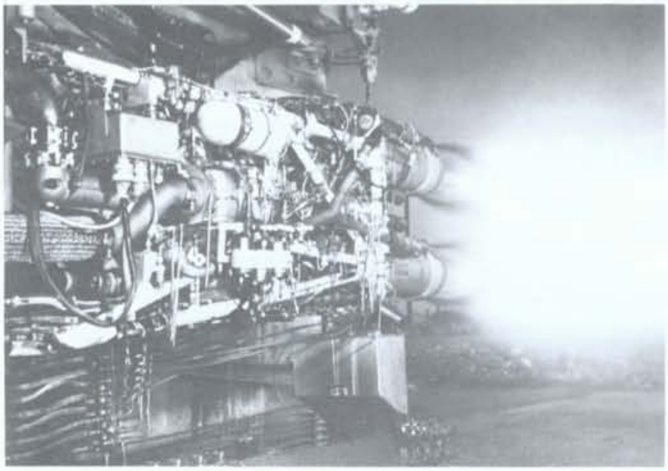


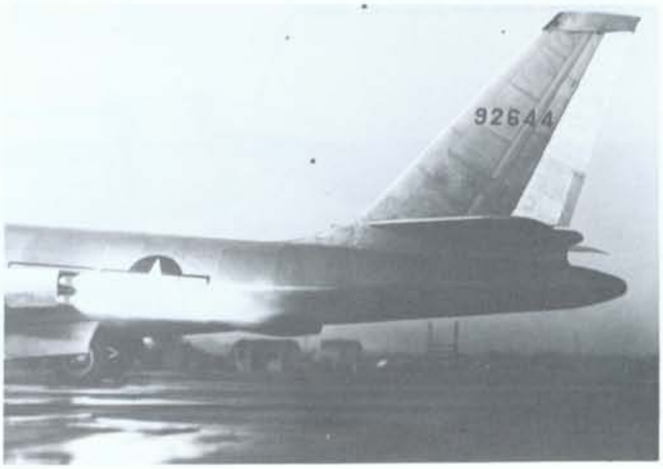
Above: Flight test of the liquid RATO unit. (via Seely)

Left: Nozzle installation behind the pop-out door on the test ship. (Edwards AFB photo 6455-G via Norton)

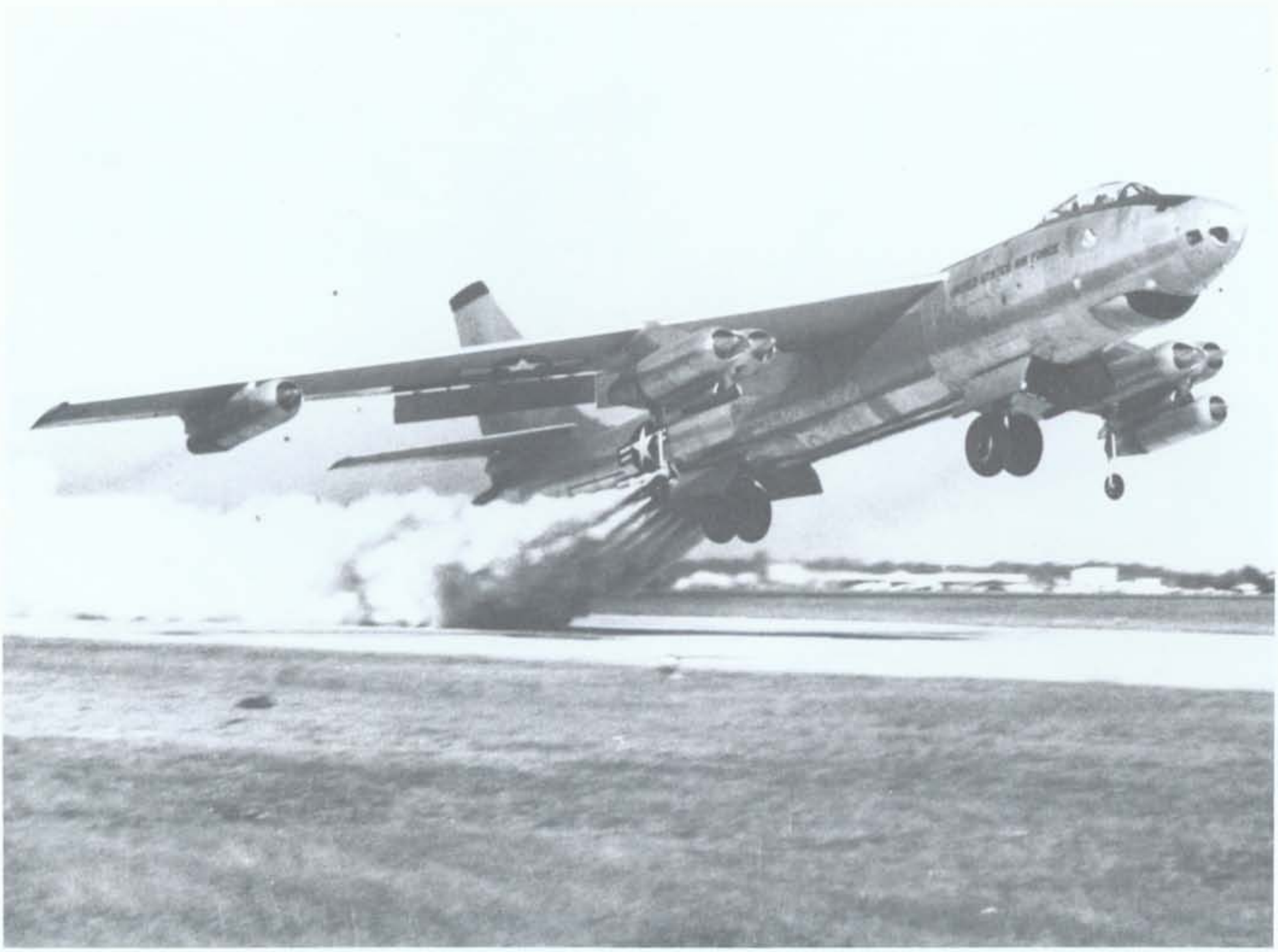
Below left: Rocket engine on a test stand. (USAF via Norton)

Below right: Ground test run of the liquid RATO installed on B-47B-1-BW, s/n 49-2644. (Edwards AFB photo 54WC-1018-A via Norton)

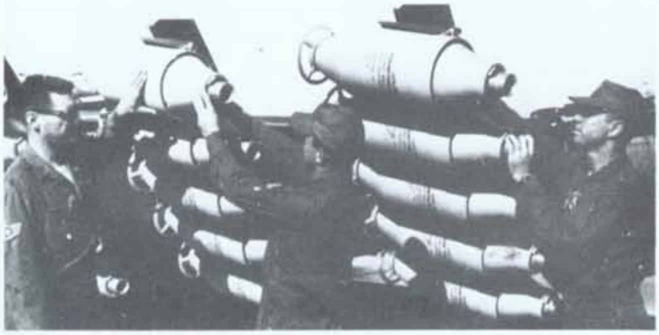




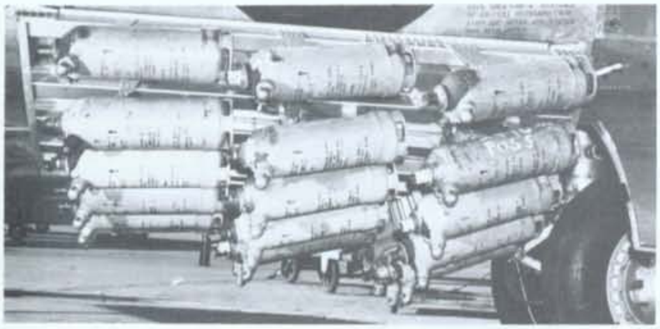
RATO UNITS



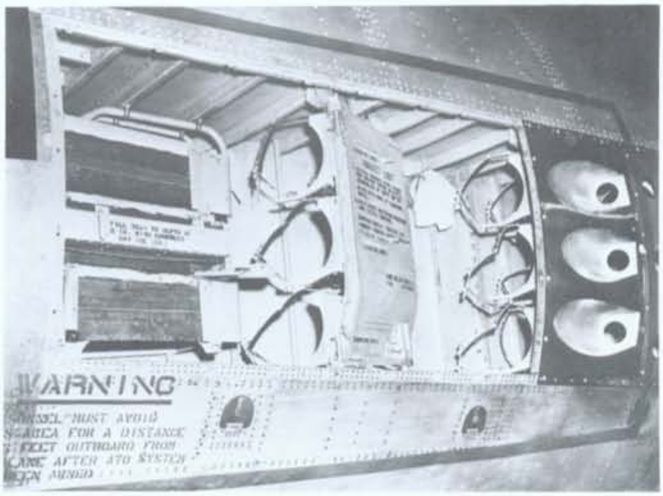
Liftoff of Air Force Flight Test Center B-47B with external RATO rack. (USAF photo)



Model 15KS1000 RATO bottles being installed on horsecollar rack. (15th AF photo)

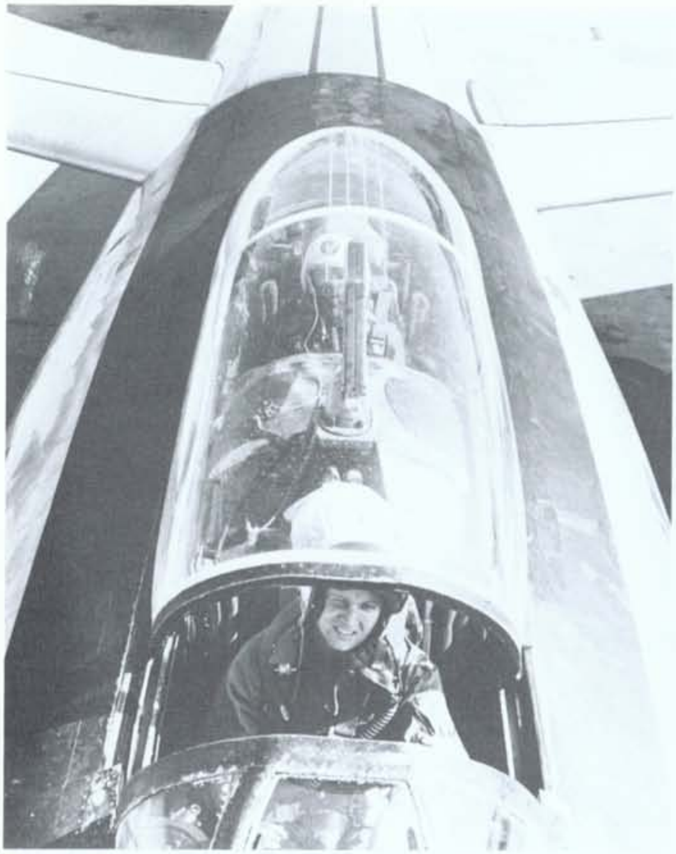


External horsecollar rack with Model 14AS1000 RATO bottles installed. (Boeing BW58429)

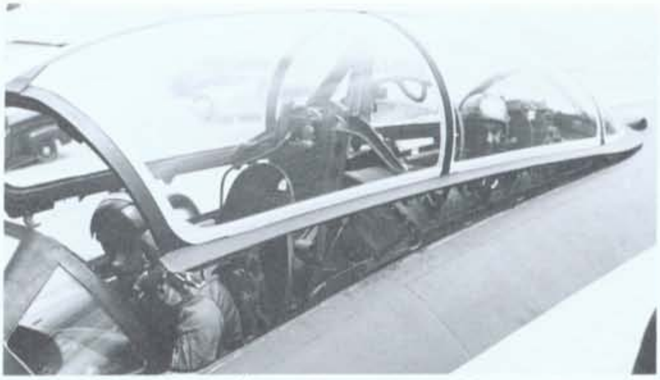


Internal RATO bottle compartment details. (Boeing P30044)

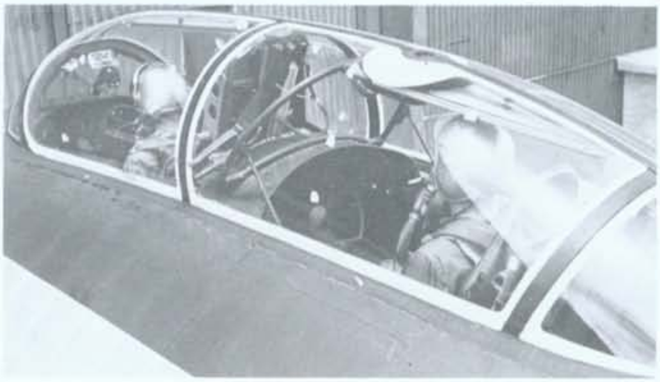
INTERIOR DETAILS



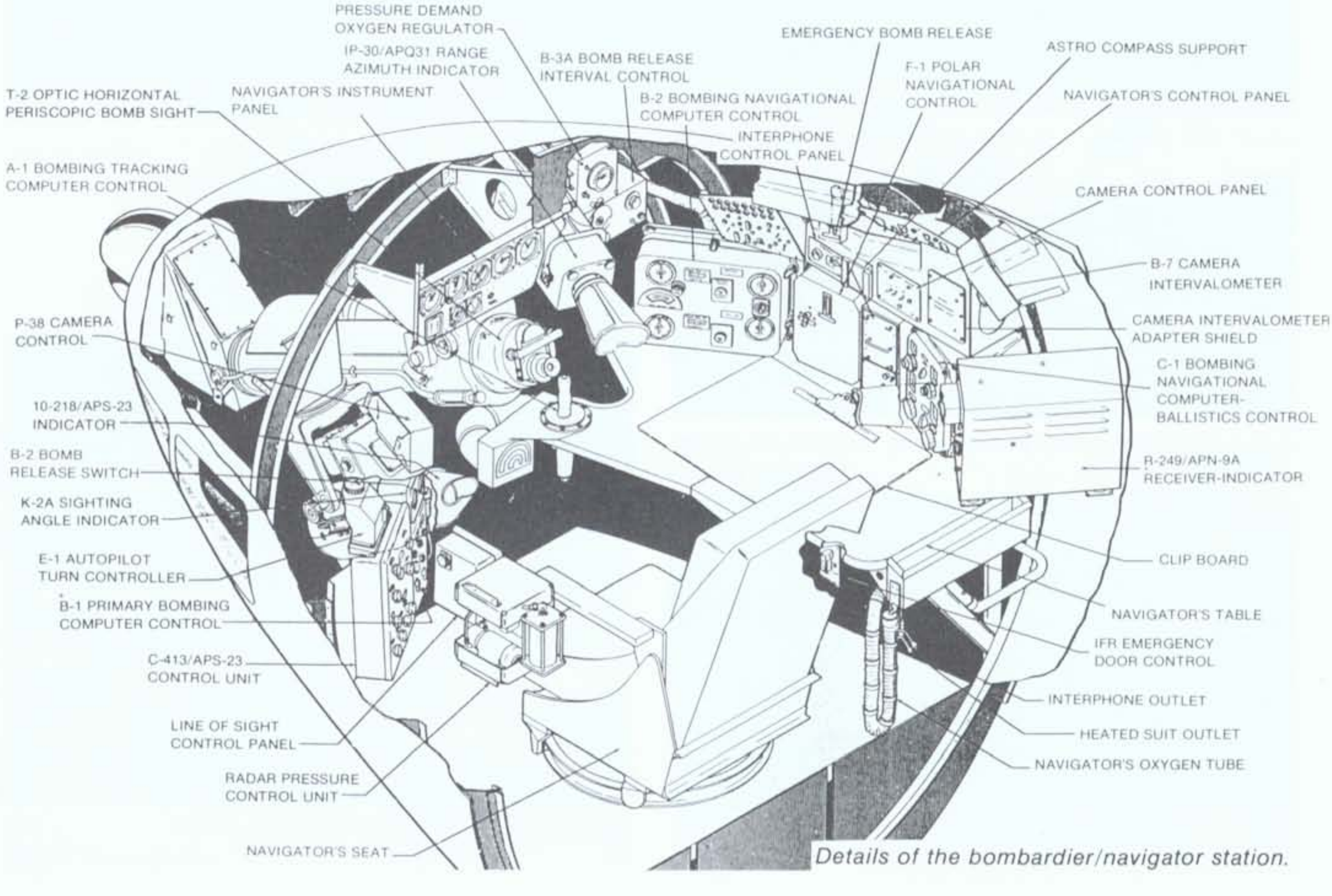
Early sliding canopy. (Boeing BW93267)



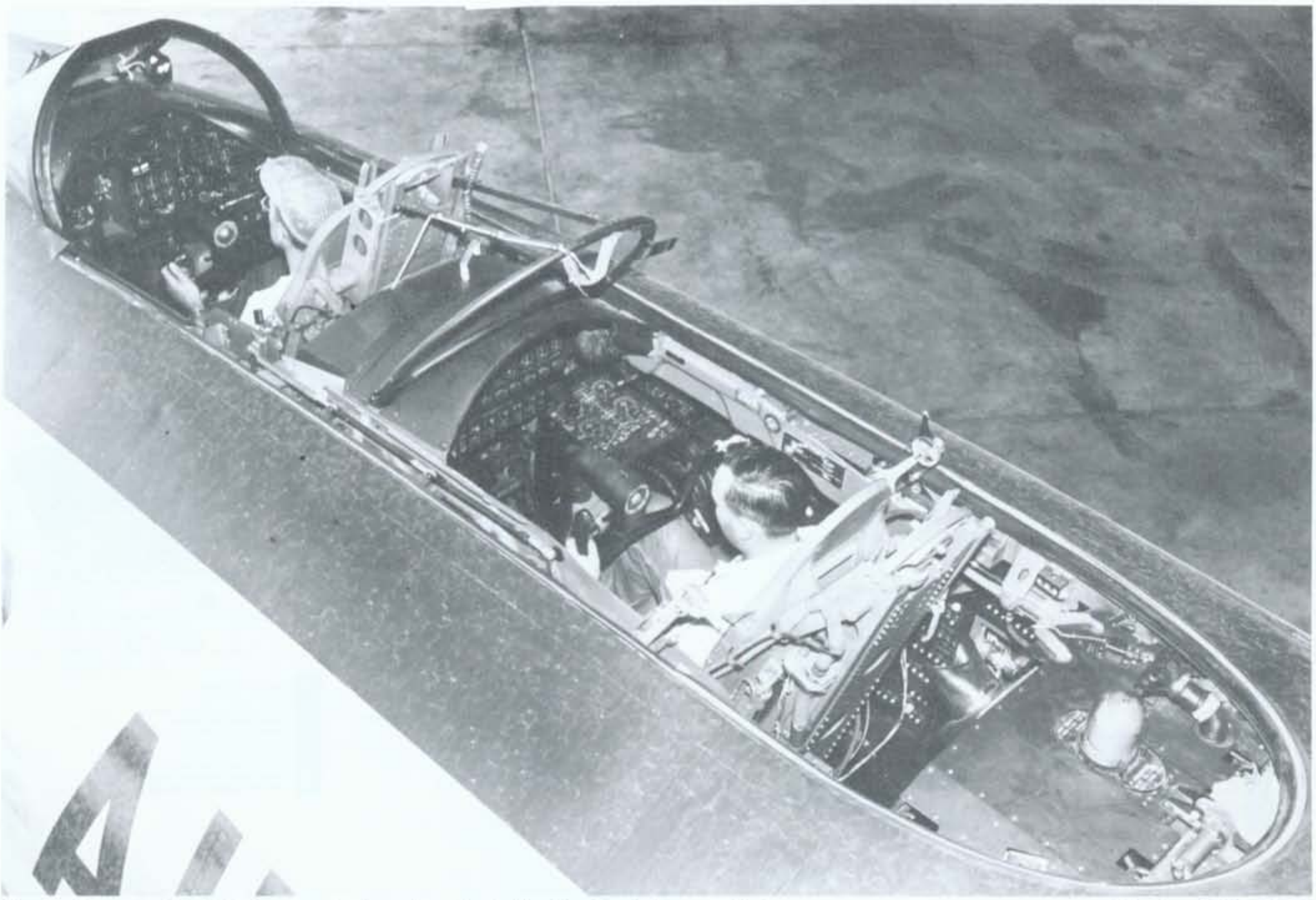
Late-model clamshell canopy. (Boeing BW93198)



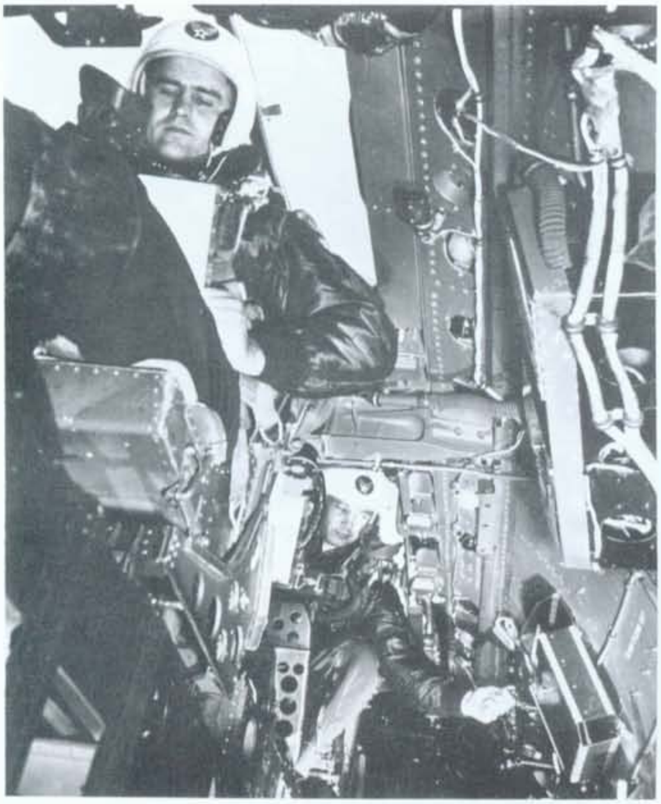
Clamshell canopy with periscopic sextant mount. The navigator traded places with the copilot in order to shoot the stars. (Boeing BW93196)


PRESSURE DEMAND OXYGEN REGULATOR
IP-30/APQ31 RANGE AZIMUTH INDICATOR
B-3A BOMB RELEASE INTERVAL CONTROL
EMERGENCY BOMB RELEASE
ASTRO COMPASS SUPPORT
F-1 POLAR NAVIGATIONAL CONTROL
NAVIGATOR'S CONTROL PANEL
T-2 OPTIC HORIZONTAL PERISCOPIC BOMB SIGHT
NAVIGATOR'S INSTRUMENT PANEL
B-2 BOMBING NAVIGATIONAL COMPUTER CONTROL
INTERPHONE CONTROL PANEL
A-1 BOMBING TRACKING COMPUTER CONTROL
CAMERA CONTROL PANEL
B-7 CAMERA INTERVALOMETER
P-38 CAMERA CONTROL
CAMERA INTERVALOMETER ADAPTER SHIELD
C-1 BOMBING NAVIGATIONAL COMPUTER-BALLISTICS CONTROL
10-218/APS-23 INDICATOR
B-2 BOMB RELEASE SWITCH
R-249/APN-9A RECEIVER-INDICATOR
K-2A SIGHTING ANGLE INDICATOR
E-1 AUTOPILOT TURN CONTROLLER
CLIP BOARD
B-1 PRIMARY BOMBING COMPUTER CONTROL
NAVIGATOR'S TABLE
IFR EMERGENCY DOOR CONTROL
C-413/APS-23 CONTROL UNIT
INTERPHONE OUTLET
LINE OF SIGHT CONTROL PANEL
HEATED SUIT OUTLET
NAVIGATOR'S OXYGEN TUBE
RADAR PRESSURE CONTROL UNIT
NAVIGATOR'S SEAT

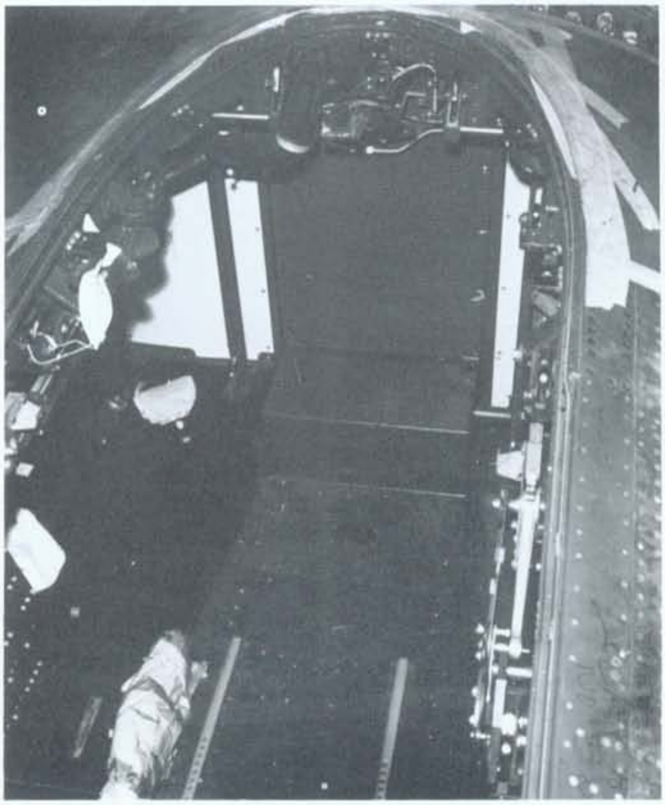
Details of the bombardier/navigator station.



Cockpit area with A-5 fire control system installed behind the copilot. *(Boeing BW93258)*

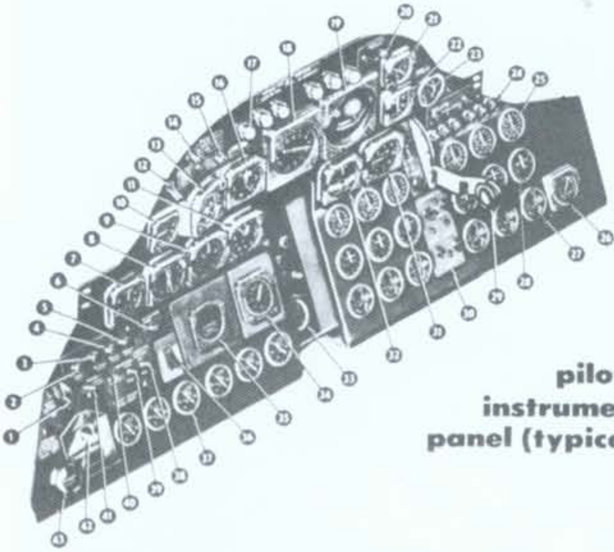


Pilots' positions above the catwalk. Some controls were located along the left sidewall. *(Boeing BW65180)*



Copilot's station prior to installation of seat and equipment. *(Boeing BW60215)*

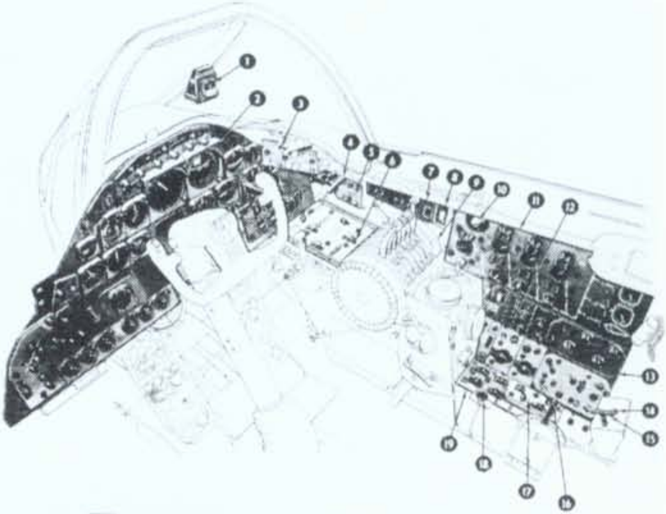
PILOT'S STATION



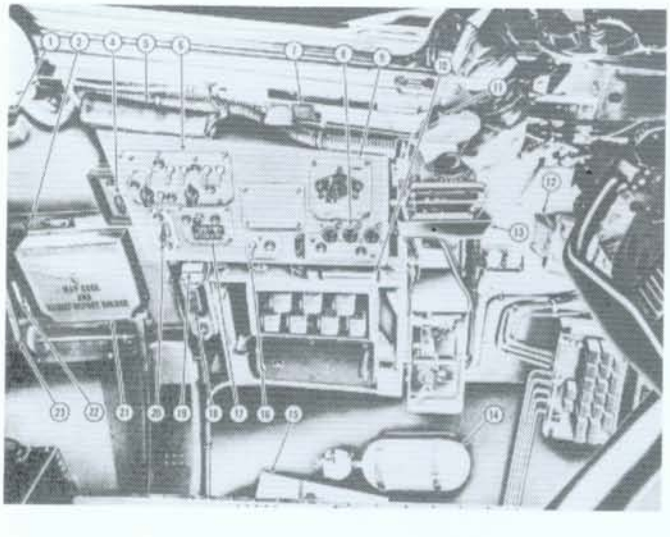
pilot's instrument panel (typical)

1. Engine Stall Prevention Switch
2. ID-249 Course Selector Indicator Light
3. Wing Overheat Warning Light
4. Empennage Overheat Warning Light
5. Bombs Away Indicator Light
6. N-1 Compass Inoperative Light
7. Machmeter
8. ID-250
9. Data Indicator
10. Accelerometer
11. Altimeter
12. Approach Chute Deployment Switch
13. ID-249
14. Anti-Skid Inoperative Light
15. Instrument AC Power Off Light
16. Maximum Allowable Airspeed Indicator
17. Fire Shutoff Switches
18. Directional Indicator (N-1 Repeater)
19. Attitude Indicator (B-1)
20. Air Refueling Ready-for-Contact Light
21. Clock
22. Wing Flap Position Indicator
23. Cabin Pressure Altitude Gage
24. Water Injection Indicator Lights
25. Tachmeters
26. Outside Air Temperature Gage
27. Exhaust Gas Temperature Gages
28. Engine Fuel Flowmeters
29. Landing Gear Lever
30. Landing Gear Position Indicators
31. Vertical Velocity Indicator
32. Turn-and-Slip Indicator
33. T-18 (IFCT)
34. Radar Altimeter (APN-22)
35. ID-310 Distance Indicator
36. Readiness Switch
37. Oil Pressure Gages
38. Directional Damper Switch (Inoperative)
39. Alternate Bomb Door Switch
40. Bomb Doors Position Indicator
41. ID-249 Course Selector Transfer Switch
42. Sliding Canopy Emergency Release Handle
43. Parking Brake Knob

pilot's station—right side (typical)

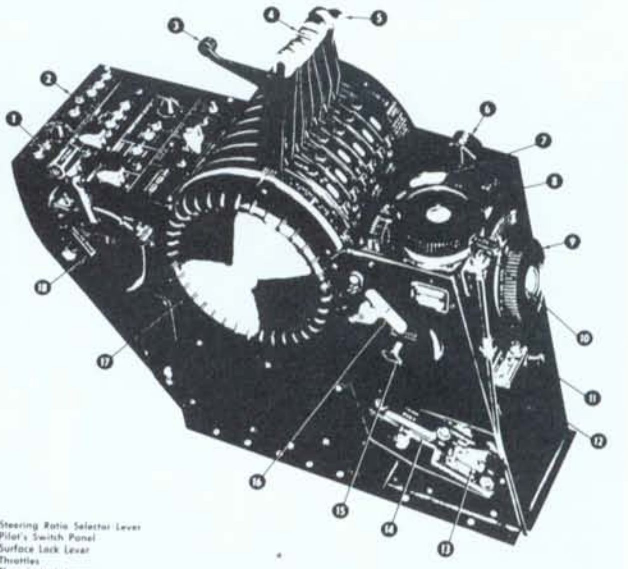


1. Magnetic Compass
2. Instrument Panel
3. Surface Power Control Panel
4. Brake Chute Deployment Handle
5. Fire Warning Test Panel
6. Pilot's Switch Panel
7. Ignition Switch Panel
8. Bomb Salvo Switch
9. Control Stand
10. Canopy Lock Lever
11. Fuel Control Panel
12. Pilot's Radio Panel
13. Pilot's Lighting Control Panel
14. Cabin Heat Reset Button
15. Cabin Pressure Emergency Release Handle (Dump Valve)
16. Canopy Latch Lever
17. Water Injection and ATO Control Panel
18. Cabin Heat Distribution Knob
19. Trim Coordination Switch Panel



1 First Aid Kit
2 Emergency Knife
3 Deleted
4 Intercommunication Filter Switch
5 Crash Station Harness Stowage
6 Pilot's Light Switch Panel
7 Airplane Checklist
8 Anti-Icing Air Temperature Panel
9 Oxygen Regulator Panel
10 Fire Extinguisher
11 Canopy Emergency Jettison Handle
12 Spare Amplifiers Rack
13 Automatic Pilot Controller and Support
14 Portable Oxygen Bottle
15 Emergency Hand Axe
16 Magnetic Compass Light Switch
17 Automatic Pilot Switch Panel
18 Food Warming Cup
19 Rear View Mirror
20 Turn Control Transfer Switch
21 Map Case and Flight Report Holder
22 Entrance Door Bailout Control Handle
23 Pressure Door Release Handle

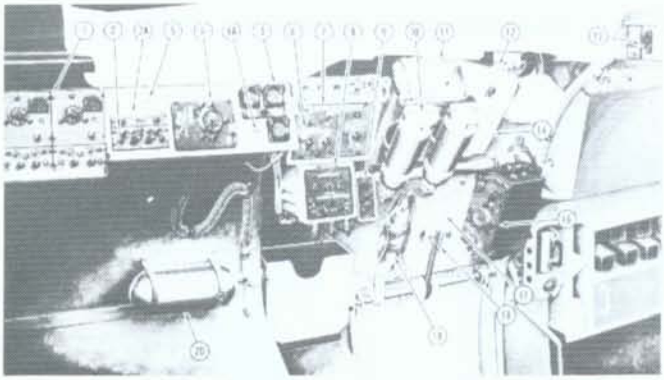
pilot's station —left side (typical)



1. Steering Ratio Selector Lever
2. Pilot's Switch Panel
3. Surface Lock Lever
4. Throttles
5. Throttle Lock Lever
6. Wing Flap Lever
7. ATO Firing Switch
8. Rudder Trim Control Wheel and Indicator
9. Aileron Trim Control Wheel and Indicator
10. Rudder Pedal Adjustment Handle
11. Landing Gear Warning Horn Release Knob
12. Landing Gear Emergency Retraction Switch
13. Drag Switch
14. Control Column Disconnect Handle
15. Air Selector Push-Pull Knob
16. Brake Chute and Approach Chute Jettison Handle
17. Elevator Trim Control Wheel and Indicator
18. Parking Brake Handle

pilot's control stand (typical)

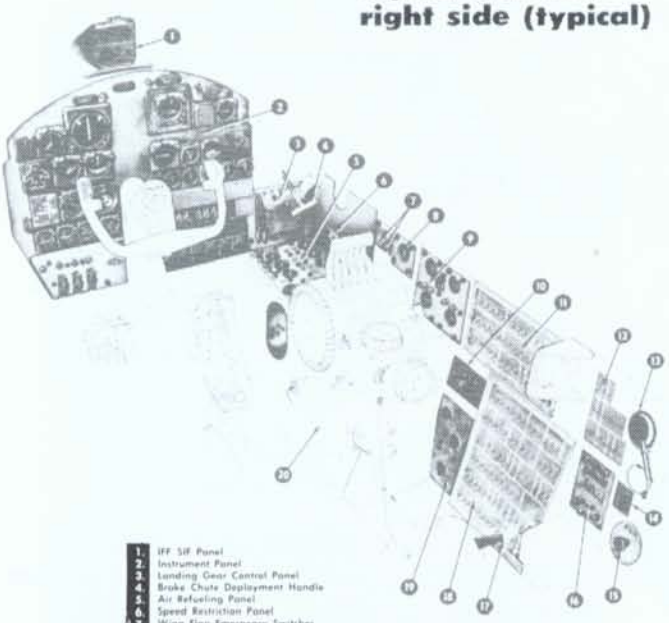
CO-PILOT'S STATION



1 Chaff Dispenser Control Panels and ECM Control Panels
2 ECM Control Panel
2A ECM Antenna Switch Panel
3 Liquid Oxygen Quantity Gages
4 Oxygen Regulator Panel
4A APS-54 Remote Audio Selector Switch (1)▶
5 Dome Light Switch
6 Cabin Air Emergency Shutoff Handle
7 Air Refueling and Anti-Icing External Lights Panel
8 UHF Command Radio Panel
9 AN/ARC-65 Liaison Radio Sub Panel
10 Thermos Bottles
11 Crash Station Harness Stowage
12 Canopy Emergency Jettison Handle
13 Approach Chute Deployment Switch
14 Cup Dispenser
15 Deleted
16 Aft Extra Seat Oxygen Regulator and Interphone Panel
17 Pressure Door Release Handle
18 Entrance Door Bailout Control Handle
19 Parachute Static Lines
20 Portable Oxygen Bottle

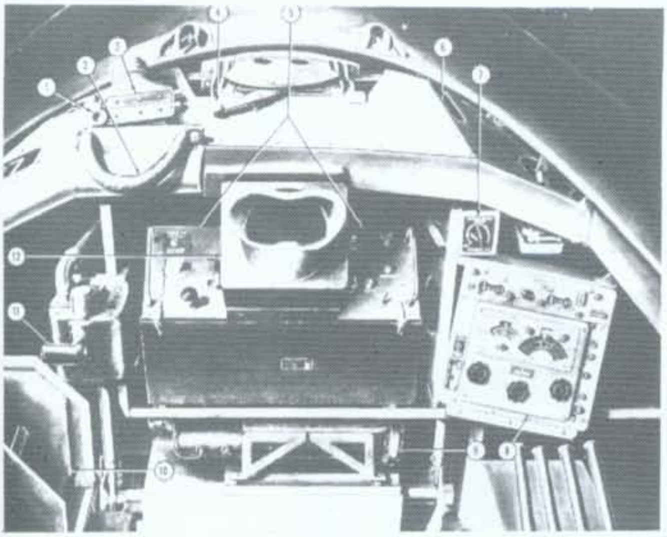
copilot's station — left side (typical)

copilot's station — right side (typical)



1. IFF SIF Panel
2. Instrument Panel
3. Landing Gear Control Panel
4. Brake Chute Deployment Handle
5. Air Refueling Panel
6. Speed Restriction Panel
7. Wing Flap Emergency Switches
8. Hydraulic Fluid Quantity Gage
9. Hydraulic System Control Panel
10. Intercom Panel
11. Upper DC Power Panel
12. Aft DC Power Panel
13. Emergency Signal Light
14. DC Bus Selector
15. Gunner's Air Outlet Selector Knob
16. Liaison Radio Master Panel
17. Air Refueling Valve Lever
18. Lower DC Power Panel
19. Lighting Panel
20. Control Stand

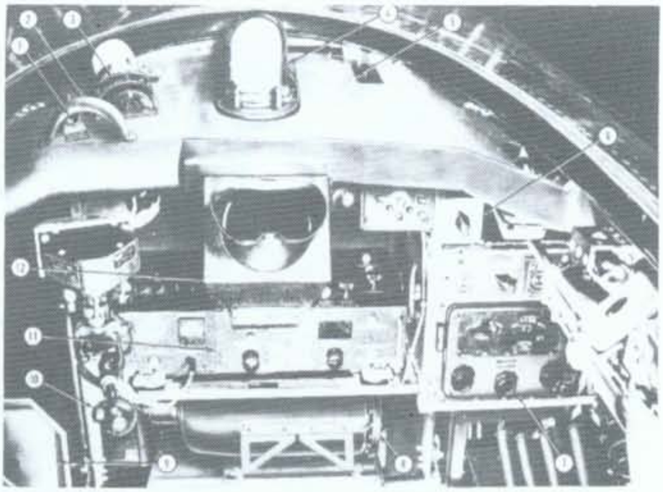
GUNNER'S POSITION



gunner's station
(copilot's station—aft)

(MD-4 fire control system — typical)

1 Oxygen Warning Light (Inoperative)
2 Assist Handle
3 Upper Air Outlet
4 Canopy Hinge Pin Release Handle
5 MD-4 Indicator Control Panel
6 Baffle Plate
7 Panel Lights Rheostat
8 MD-4 Turret Control Panel
9 ARC-65 Antenna Coupler
10 Periscopic Sextant Stowage
11 MD-4 Antenna Control Handle
12 MD-4 Gun-Laying Radar Scope

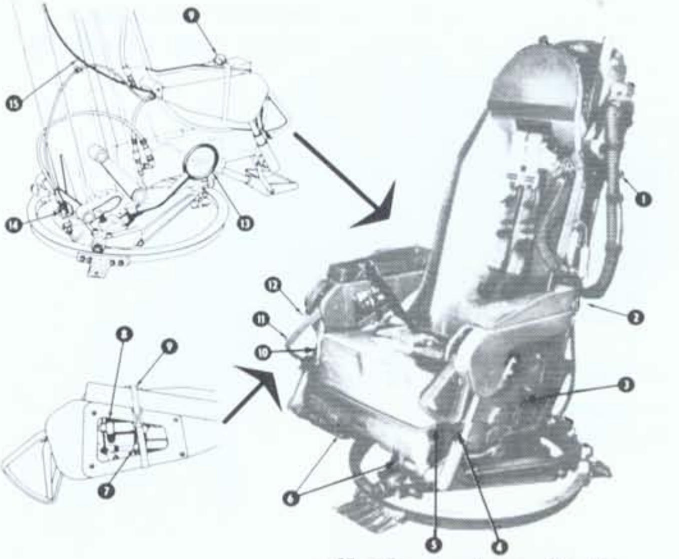


gunner's station
(copilot's station—aft)

(A-5 fire control system — typical)

1 Oxygen Warning Light (Inoperative)
2 Assist Handle
3 Upper Air Outlet
4 Radio Compass Loop Antenna
5 Baffle Plate
6 Panel Lights Rheostat
7 A-5 Turret Control Panel
8 ARC-65 Antenna Coupler
9 Periscopic Sextant Stowage
10 A-5 Antenna Control Handle
11 A-5 Indicator Control Panel
12 A-5 Gun-Laying Radar Scope

EJECTION SEATS



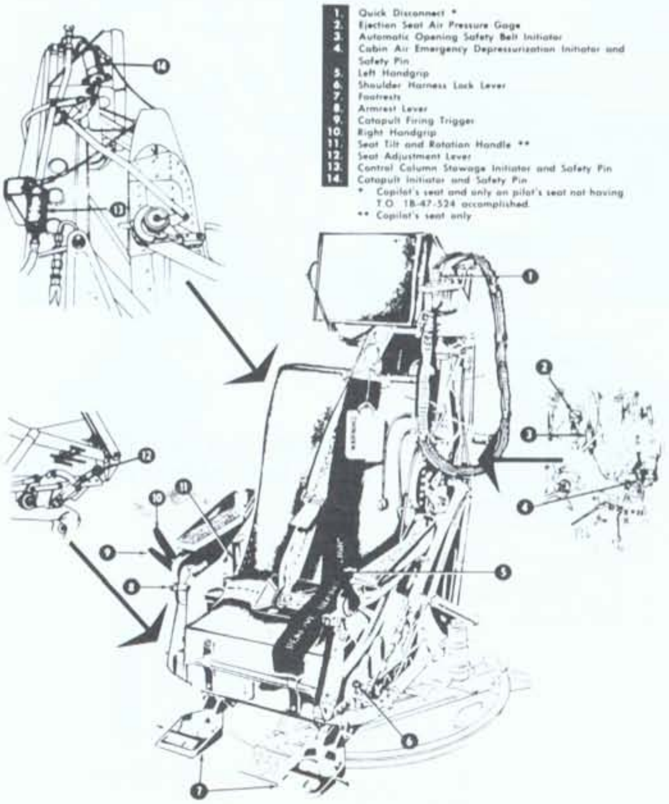
pilot's and copilot's ejection seat — weber

1	Quick Disconnect*
2	Automatic Opening Safety Belt Initiator (Behind Seat)
3	Shoulder Harness Lock Lever
4	Armrest Locks
5	Left Handgrip
6	Footrests (Stowed)
7	Ballistics System Initiator
8	Catapult Initiator
9	Safety Pin
10	Catapult Trigger Lever
11	Right Handgrip
12	Seat Adjustment Switch
13	Seat Tilt and Rotation Handle*
14	Electrical Quick Disconnect
15	Catapult Initiator Release Cable

* Copilot's seat only

Pilots' upward ejection seat built by Weber Aircraft. The copilot's seat had a 180 degree rotation feature.

pilot's and copilot's ejection seat – republic



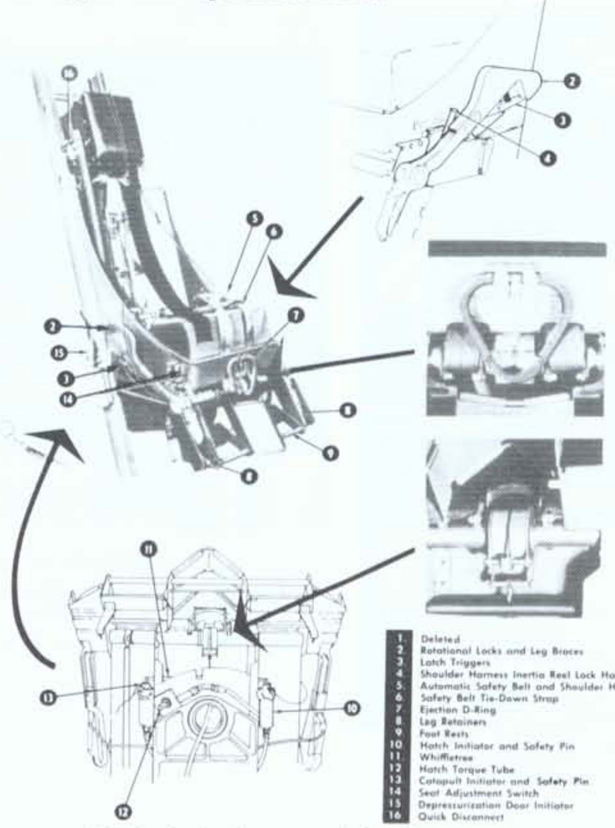
1.	Quick Disconnect *
2.	Ejection Seat Air Pressure Gage
3.	Automatic Opening Safety Belt Initiator
4.	Cabin Air Emergency Depressurization Initiator and Safety Pin
5.	Left Handgrip
6.	Shoulder Harness Lock Lever
7.	Footrests
8.	Armrest Lever
9.	Catapult Firing Trigger
10.	Right Handgrip
11.	Seat Tilt and Rotation Handle **
12.	Seat Adjustment Lever
13.	Control Column Stowage Initiator and Safety Pin
14.	Catapult Initiator and Safety Pin

* Copilot's seat and only on pilot's seat not having T.O. 1B-47-524 accomplished

** Copilot's seat only

Pilots' upward ejection seat built by Republic Aircraft. The copilot's seat had a 180 degree rotation feature.

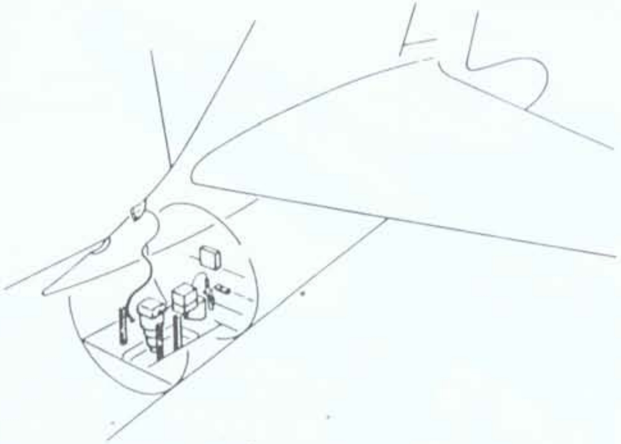
navigator's ejection seat

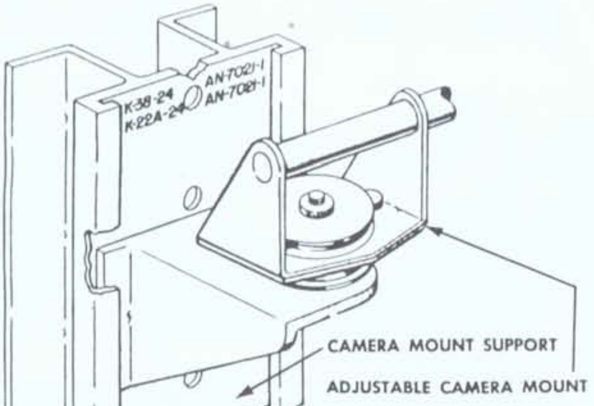


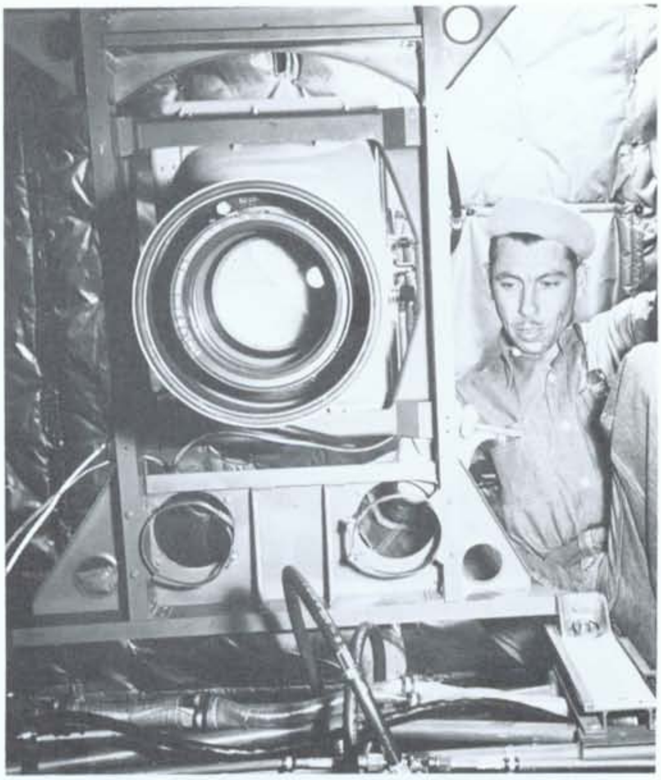
1.	Deleted
2.	Rotational Locks and Leg Braces
3.	Latch Triggers
4.	Shoulder Harness Inertia Reel Lock Handle
5.	Automatic Safety Belt and Shoulder Harness
6.	Safety Belt Tie-Down Strap
7.	Ejection D-Ring
8.	Leg Retainers
9.	Foot Rests
10	Hatch Initiator and Safety Pin
11.	Whiffletree
12	Hatch Torque Tube
13	Catapult Initiator and Safety Pin
14	Seat Adjustment Switch
15	Depressurization Door Initiator
16	Quick Disconnect

Navigator's downward ejection seat.

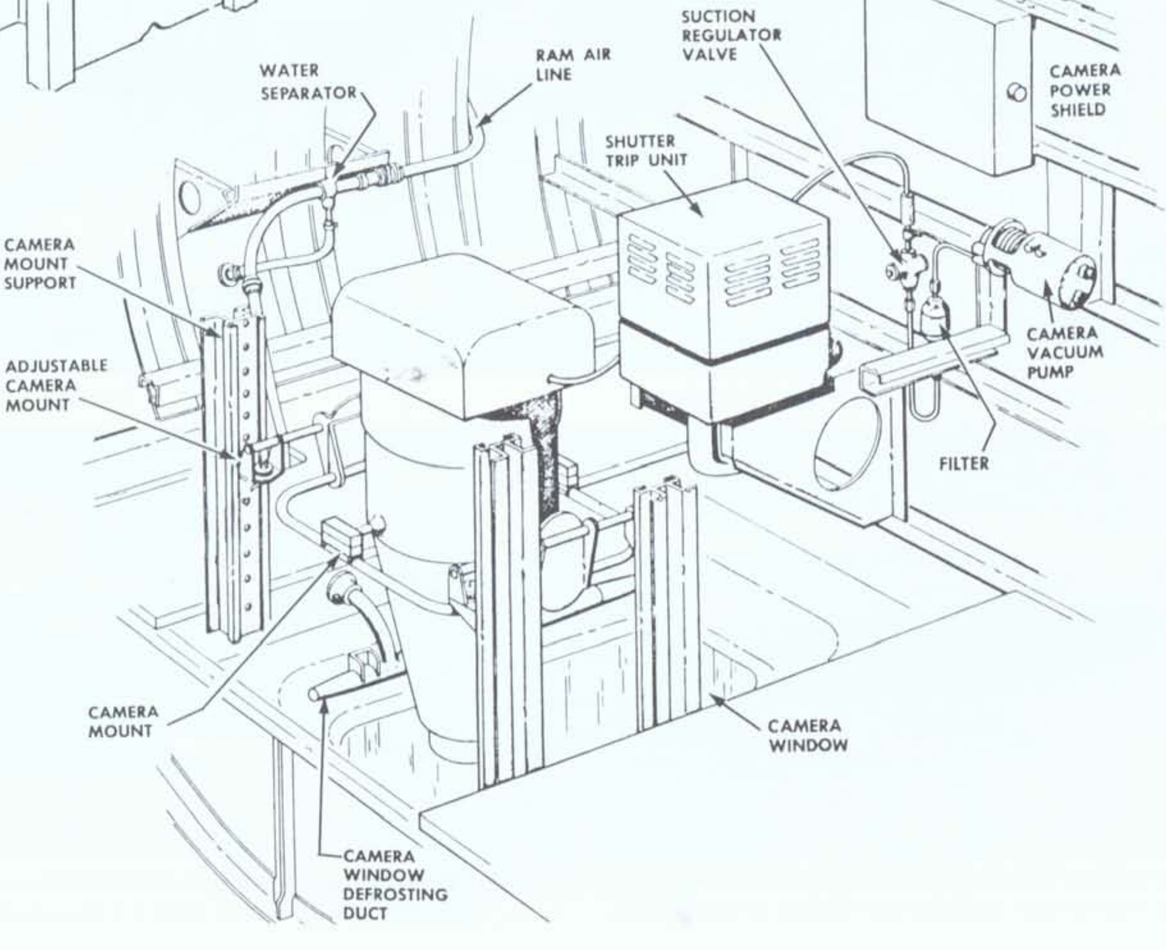
STRIKE CAMERA INSTALLATION



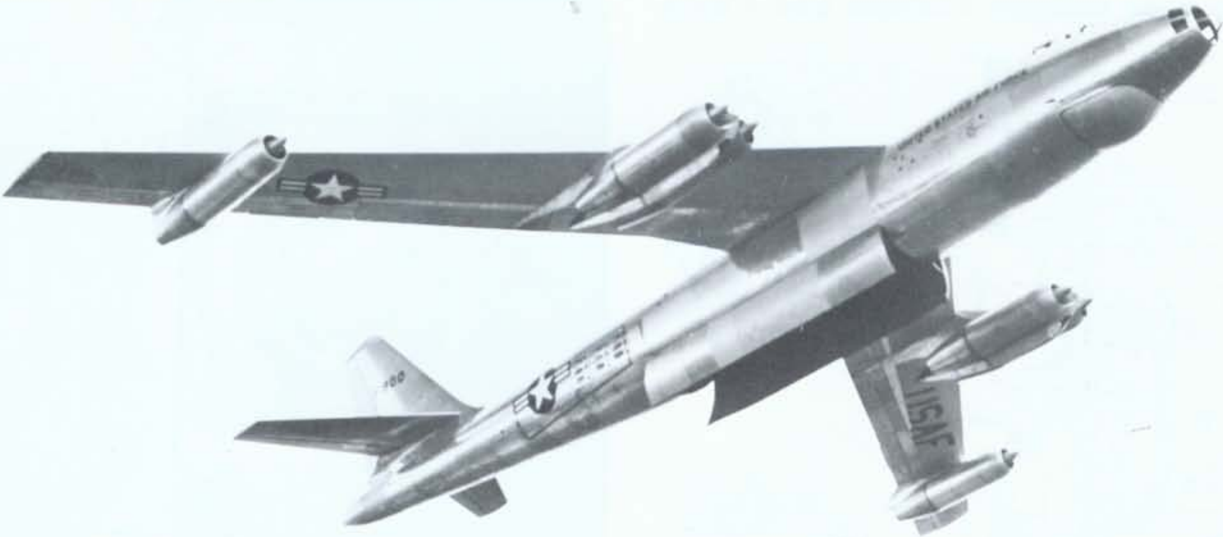




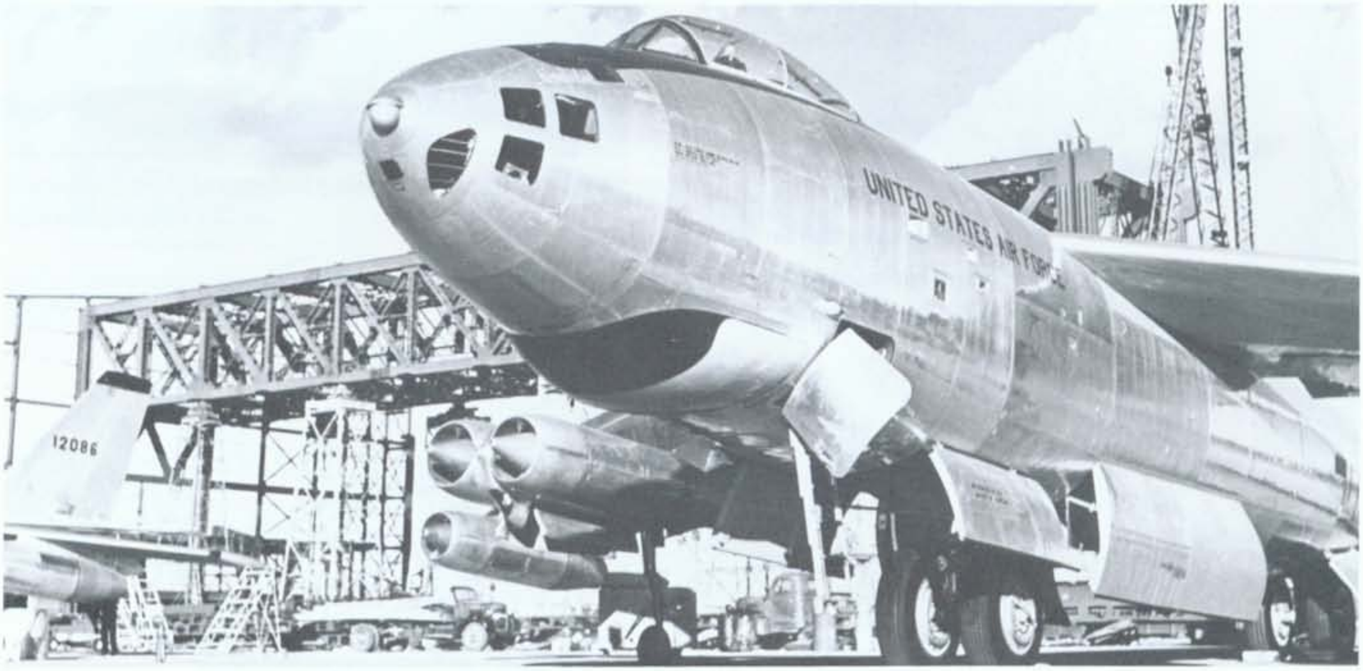
Vertical strike camera being installed in the aft camera bay. (Boeing BW65920)



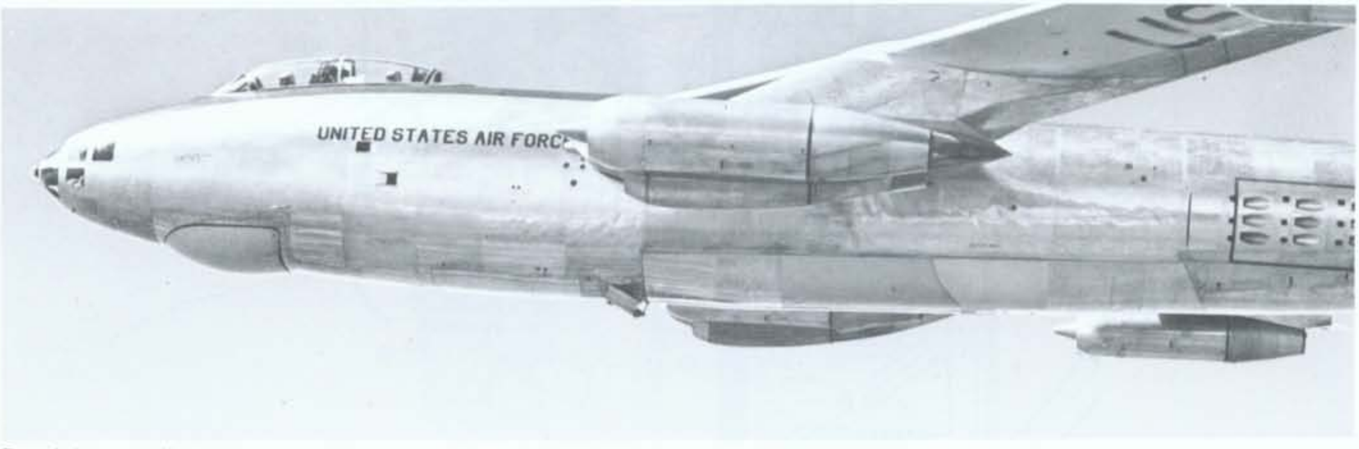
OFFENSIVE ARMAMENT



Long bomb bay configuration on B-47A, s/n 49-1900, photographed in August 1950. (Boeing P10238)

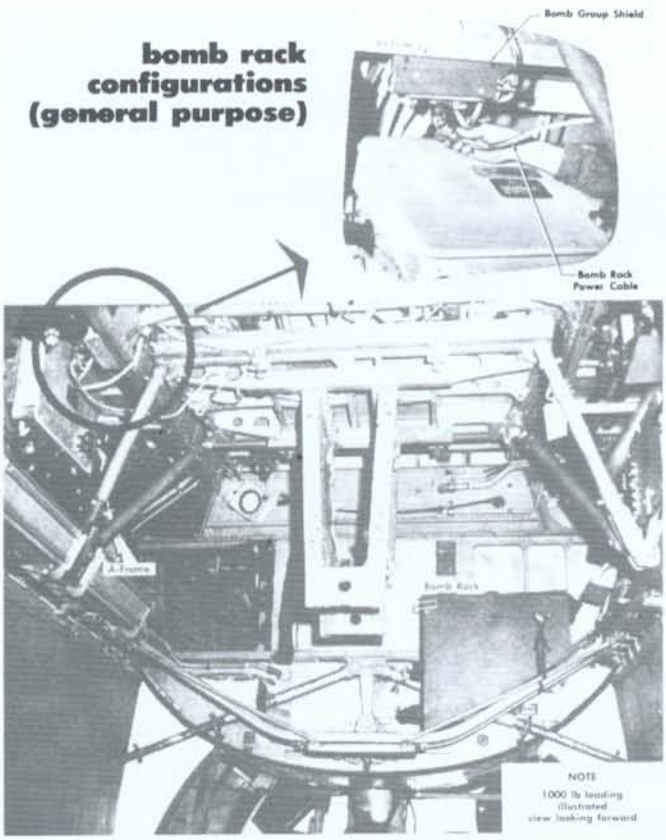


B-47B-25-BW, s/n 51-2077, with short bomb bay doors. (Boeing BW60174)

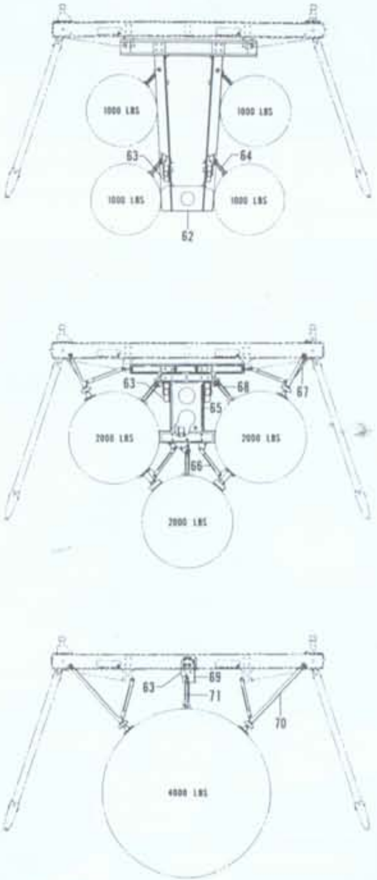


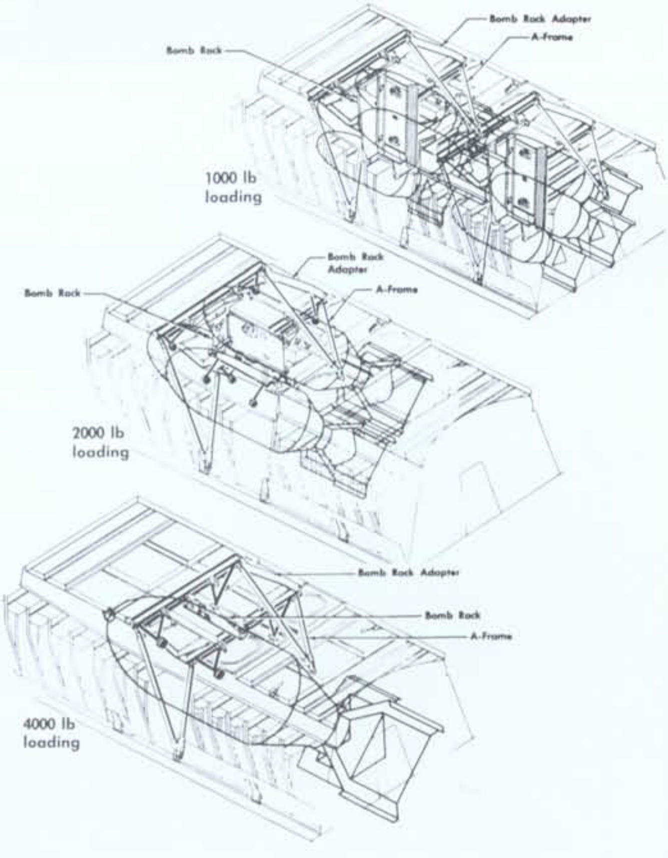
Bomb bay spoilers are extended on this B-47A photographed on 15 May 1951. The spoilers were the result of testing when it was found that airflow inhibited the release of the bombs. (Boeing P11221)

bomb rack configurations (general purpose)



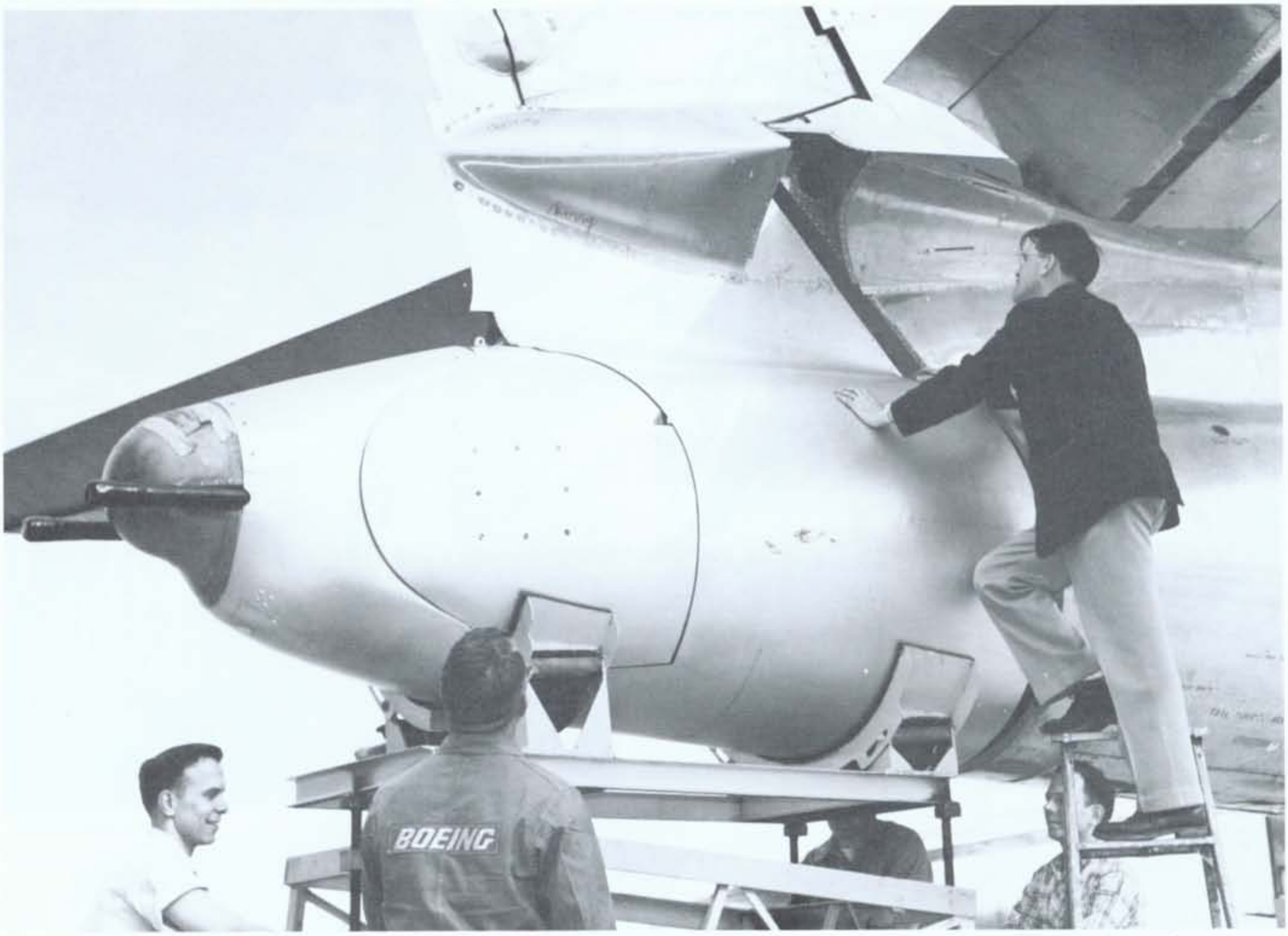
Loading 1000 lb bombs. *(Boeing BW65583)*



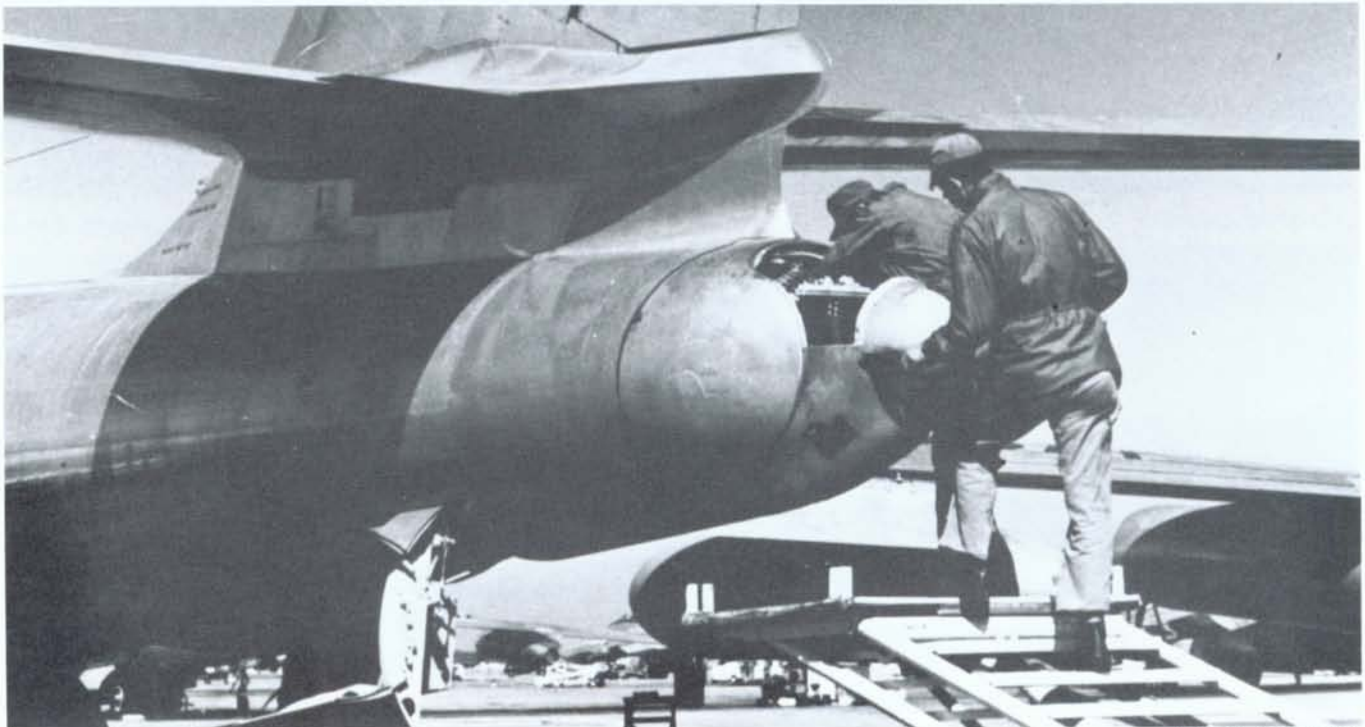


General purpose bomb rack configurations for: 1 x 4000 lb, 3 x 2000 lb, and 8 x 1000 lb bomb configurations.

DEFENSIVE ARMAMENT



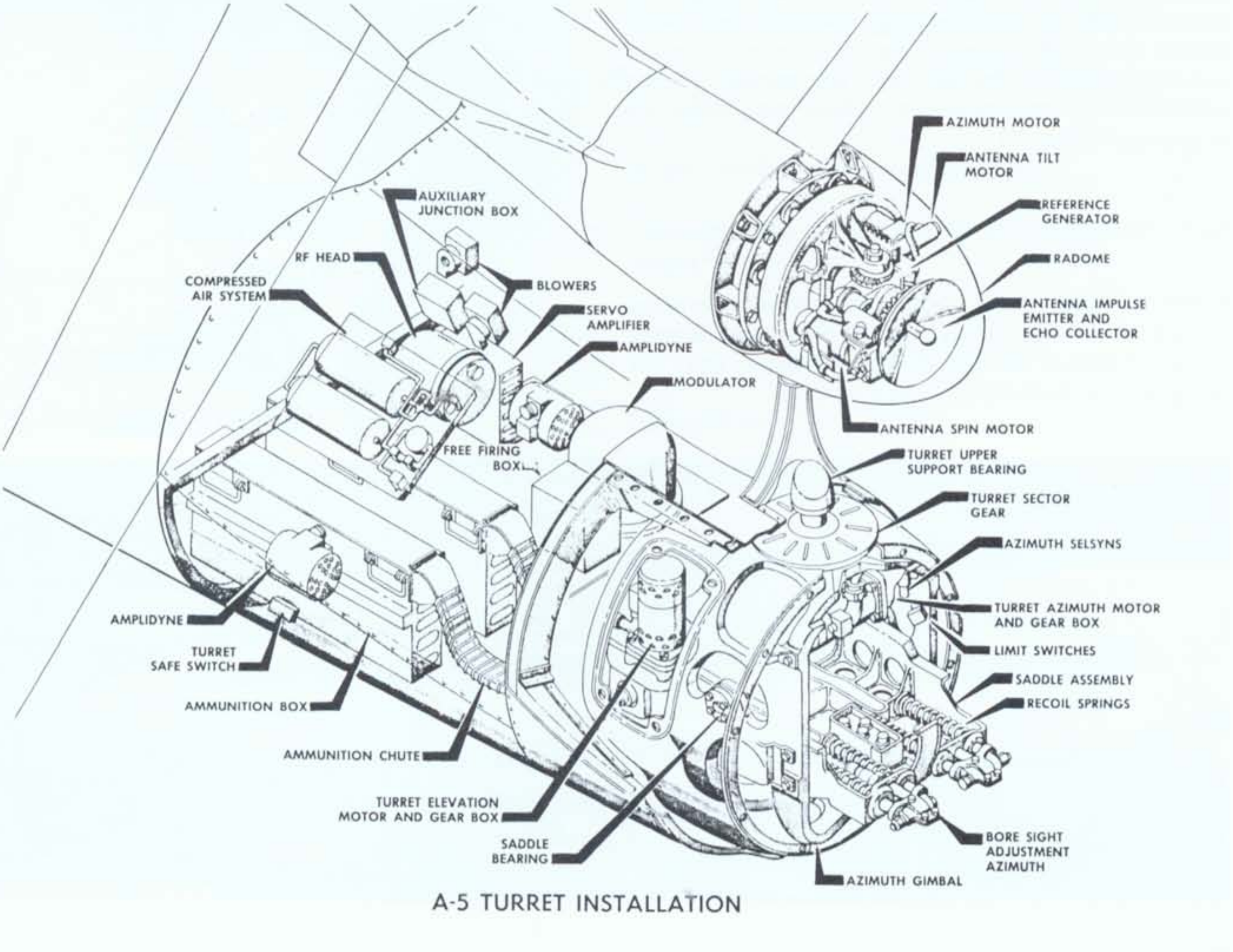
The .50 caliber tail gun installation is seen being installed on B-47A, s/n 49-1906. The guns straddled the radar antenna fairing. *(Boeing BW45734-6)*



A ground crew works on the .50 caliber guns of a 306th BW Stratojet. *(USAF 47119AC)*

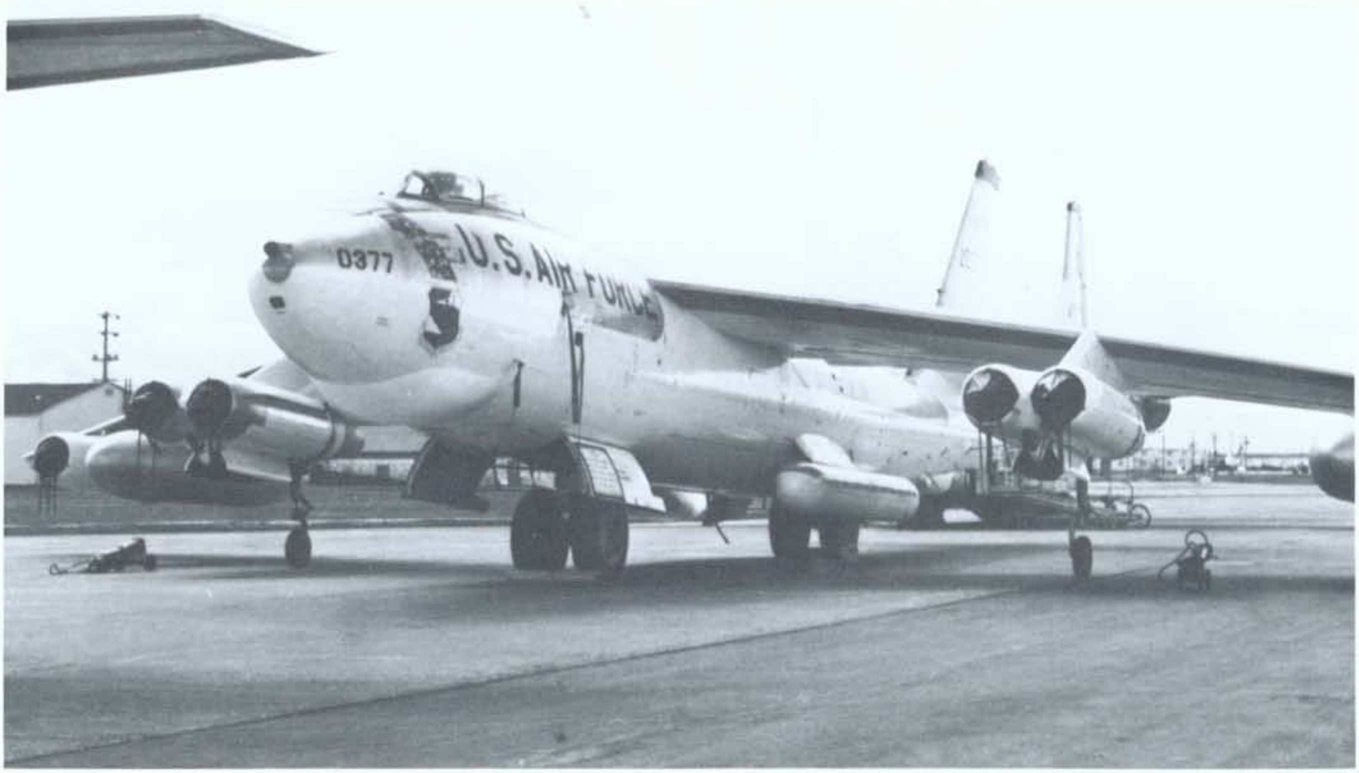
An armament crew installs the 20mm cannon. (15th AF photo)

Factory installation of Section 47 housing the radar and guns. (Boeing BW65434)



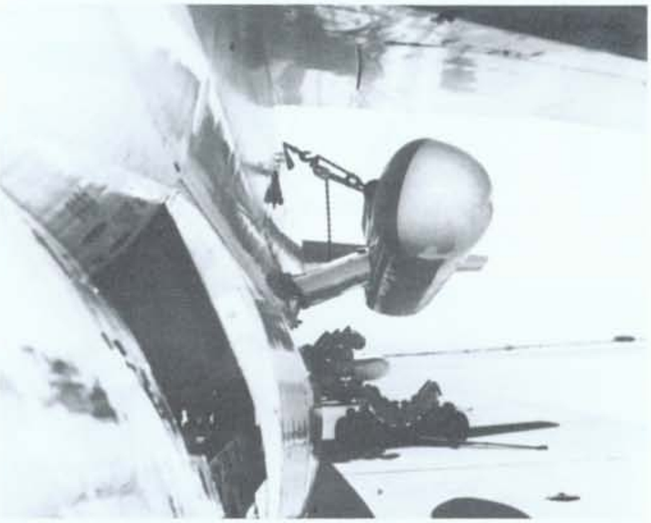
A-5 TURRET INSTALLATION

TEE TOWN ECM POD



Above: This B-47E, s/n 52-0377, had Phase II ECM and the Tee Town ECM pods installed. This aircraft was assigned to the 303rd BW, and was photographed at Elmendorf AFB, Alaska, in May 1960. Though the aircraft has a full white anti-radiation finish, the SAC crest was applied over the white paint. The upper portion of the ECM pod and strut are in natural metal finish.

(USAF Museum photo A1 B-47E/Pho/2)

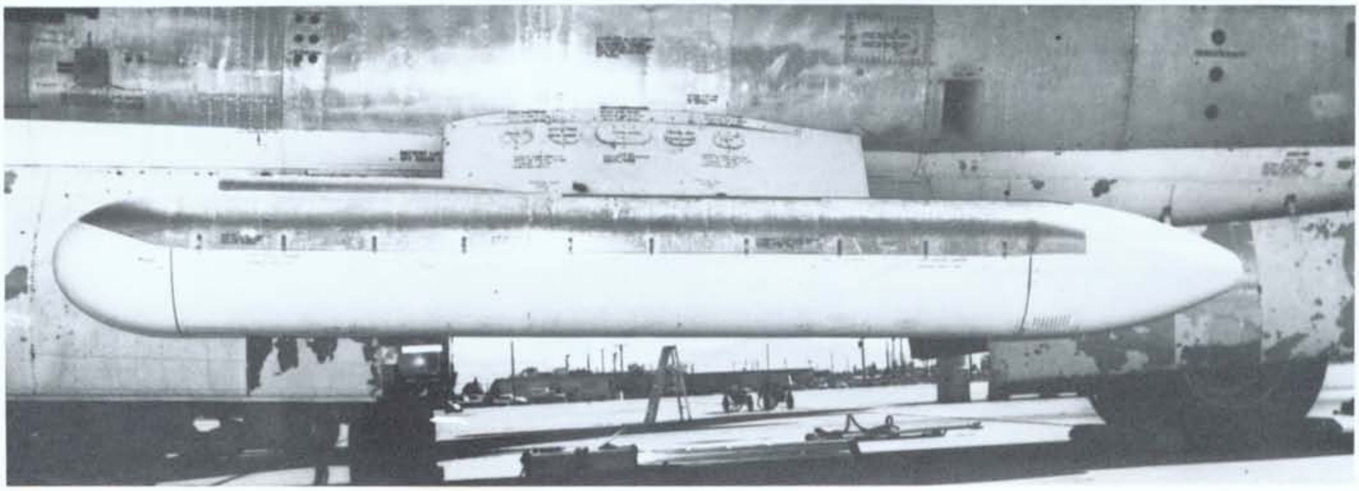


Right: Front view of Tee Town ECM pod being installed.

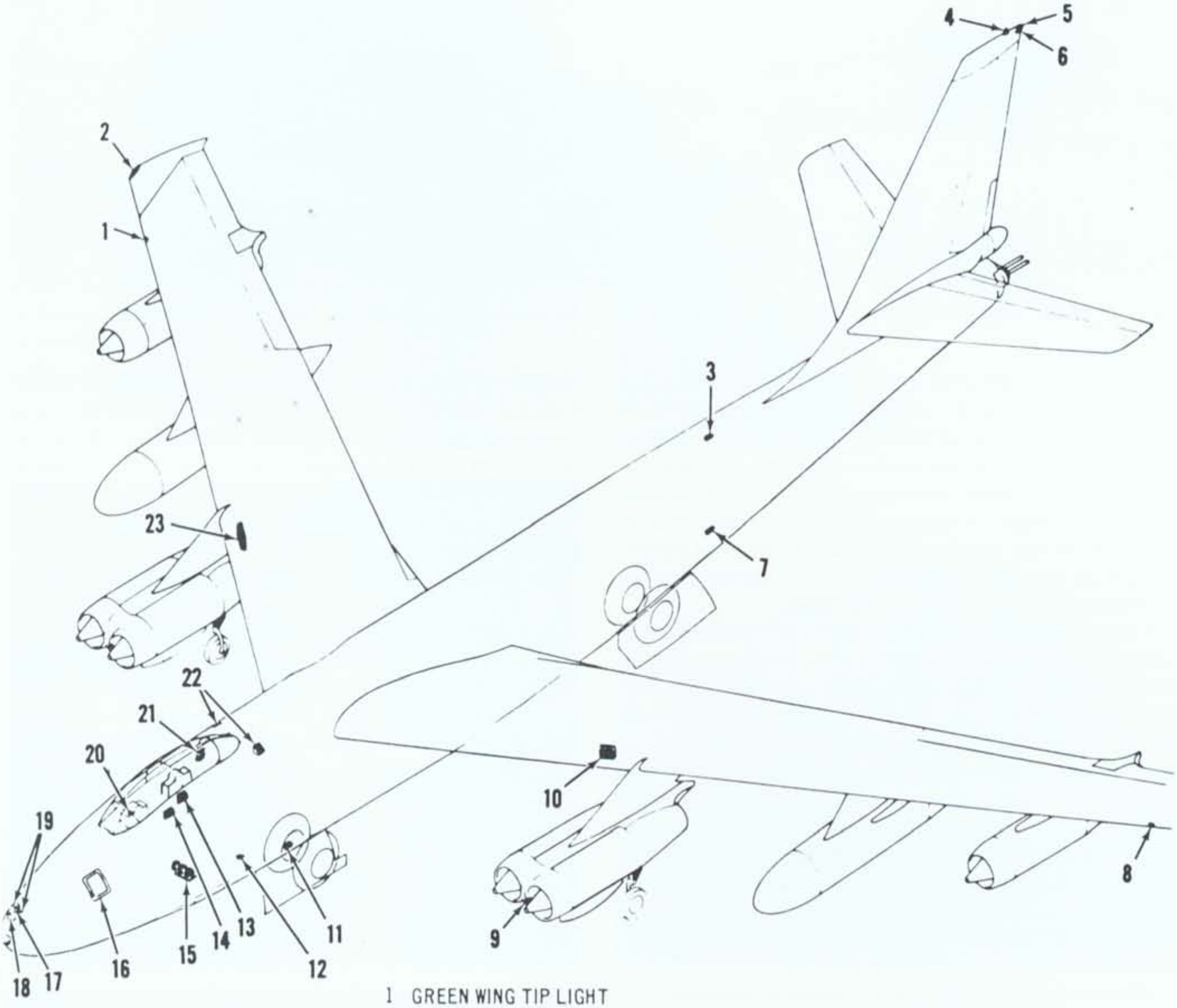
(15th AF photo)

Below: Tee Town ECM pod installed on the left waist of the aircraft. An identical pod was carried on the right side of the aircraft. A total of 100 aircraft were modified to carry this equipment by the Douglas-Tulsa Company.

(15th AF photo)

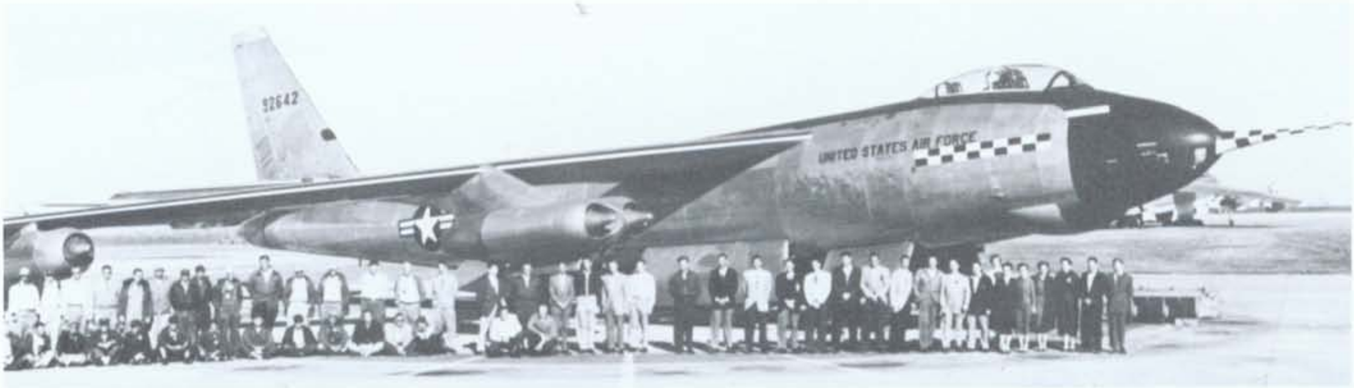


LIGHTING



1 GREEN WING TIP LIGHT
2 GREEN WING TIP LIGHT
3 TOP FUSELAGE LIGHT
4 UPPER ANTICOLLISION LIGHT
5 YELLOW FIN TIP LIGHT
6 WHITE FIN TIP LIGHT
7 BOTTOM FUSELAGE LIGHT
8 RED WING TIP LIGHT
9 LANDING LIGHTS
10 LEFT INBOARD NACELLE COMPARTMENT
11 TAXI LIGHT
12 LOWER ANTICOLLISION LIGHT
13 COPILOT AIR REFUELING AND WING ILLUMINATION PANEL
14 PILOT OXYGEN AND RHEOSTAT PANEL
15 NAVIGATION LIGHTS FLASHER MECHANISM
16 OBSERVER WINDOW LIGHTS
17 AIR REFUELING RECEPTACLE LIGHT
18 AIR REFUELING RECEPTACLE DOOR LIGHT
19 AIR REFUELING ADAPTER LIGHTS
20 PILOT SWITCH PANEL
21 SIGNAL LAMP RECEPTACLE
22 WING ILLUMINATION LIGHTS
23 RIGHT INBOARD NACELLE COMPARTMENT

MISSION TACTICS & MODIFICATIONS



The first B-47B-1-BW, s/n 49-2642, was fitted with a gust probe on the nose and distinctive black and white checkered markings. *(Williams)*

Originally conceived as a high altitude bomber, mission tactics for the B-47 were changed because of improvements in Soviet anti-aircraft defenses. New tactics were developed for low altitude penetration (beneath the radar), a pull-up, bomb release, and departure. Such maneuvers were commonplace for fighters, but not bombers. The B-47 was limited to two positive "G"s at maximum gross weight, but its high speed and responsive control system enabled the 193-ton B-47 to perform like a fighter.

Two maneuvers were developed for low altitude penetration. One was the "Pop Up" and the other was the Low Altitude Bombing System (LABS). For the "Pop Up" maneuver, the B-47 was flown on the deck, then a rapid pull-up to 18,000 feet was initiated. At the top of the maneuver the bomb was released, after which the aircraft was quickly rolled out and dived back to the deck. For the LABS maneuver, the B-47 was flown through an Immelmann. The airplane was flown in on the deck, then pulled up into a half-loop. At the top of the loop, the bomb was released, and a half-roll was initiated for departure from the target area. Either maneuver provided the requisite clearance for the impending nuclear explosion.

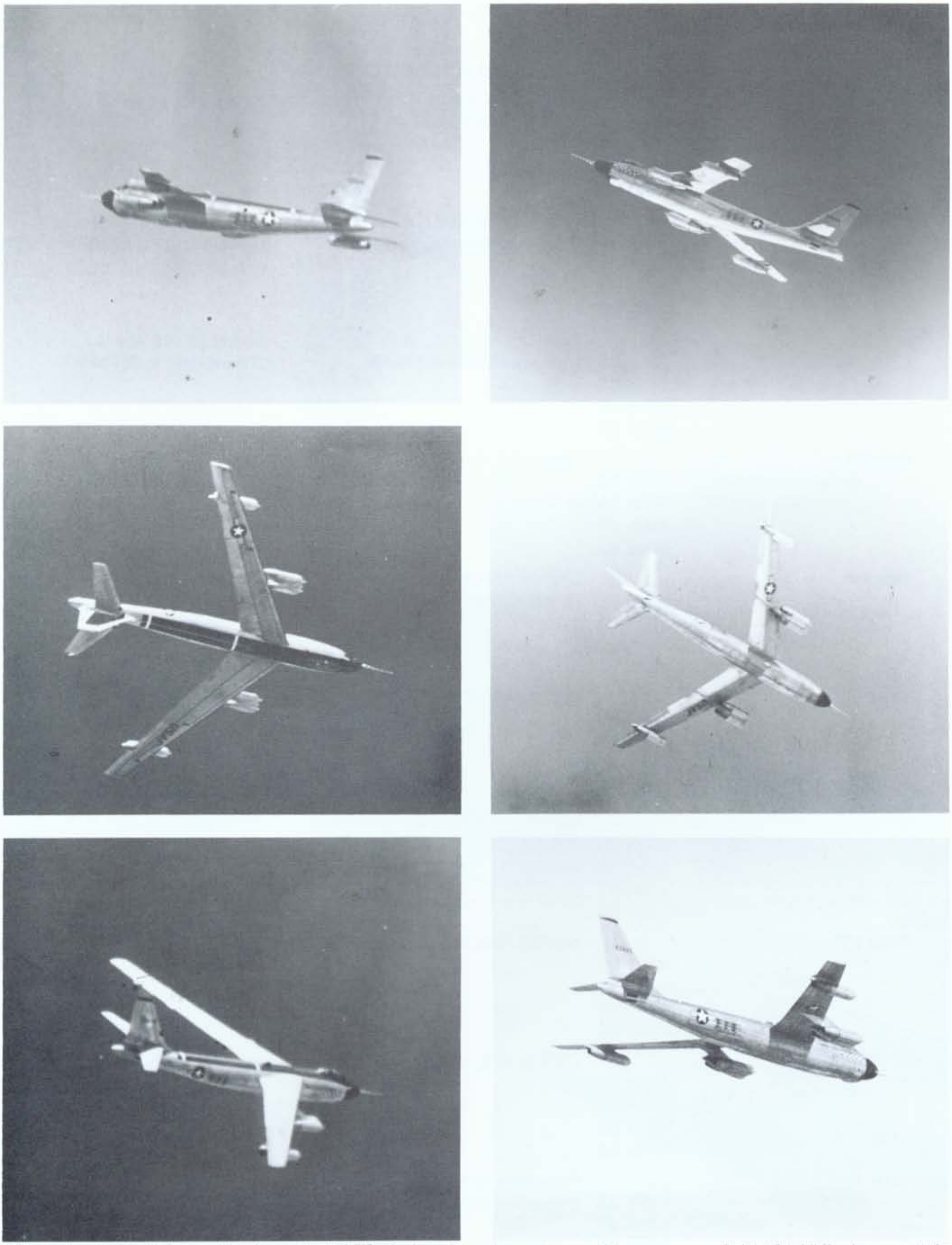
While not difficult to execute, these maneuvers often resulted in the pilot exceeding the airplane "G" limitations. These maneuvers performed beyond the "G" limit induced fatigue in the airplane structure. Six B-47s crashed between March 13 and April 15, 1958, and the fleet was grounded for investigation. The inspections traced the problem to stress corrosion in the milk bottle pins used to attach the wing spars to the fuselage bulkhead fittings at Body Stations 425 and 515. Cracks at other fasteners were also found.

A major modification program was initiated in order to strengthen the wings. This was the largest modification program for the B-47s, and was known as the Milk Bottle package. These modifications were performed at Boeing-Wichita, Douglas-Tulsa, Lockheed-Georgia, Oklahoma City Air Materiel Area at Tinker AFB, and McClellan Air Materiel Area at McClellan AFB in Sacramento, California. First, the wings were removed, then numerous fasteners were removed, holes were inspected and reworked as required, and the large milk bottle joints were inspected and replaced. This modification program led to a six-year life extension for the B-47.

Lessons learned on the B-47 were incorporated into the design, manufacture, operation, and maintenance of future bombers. As the technology base grew and the airplane mission changed, the B-47 was modified to meet the challenge.

This B-47E-75-BW, s/n 51-7069, was specially marked for camera recording of flight load testing and maneuverability during toss bombing tests. *(Boeing Wichita BW93216)*

Instrumentation gear was added to the wing tips and on top of the fuselage. *(Williams)*



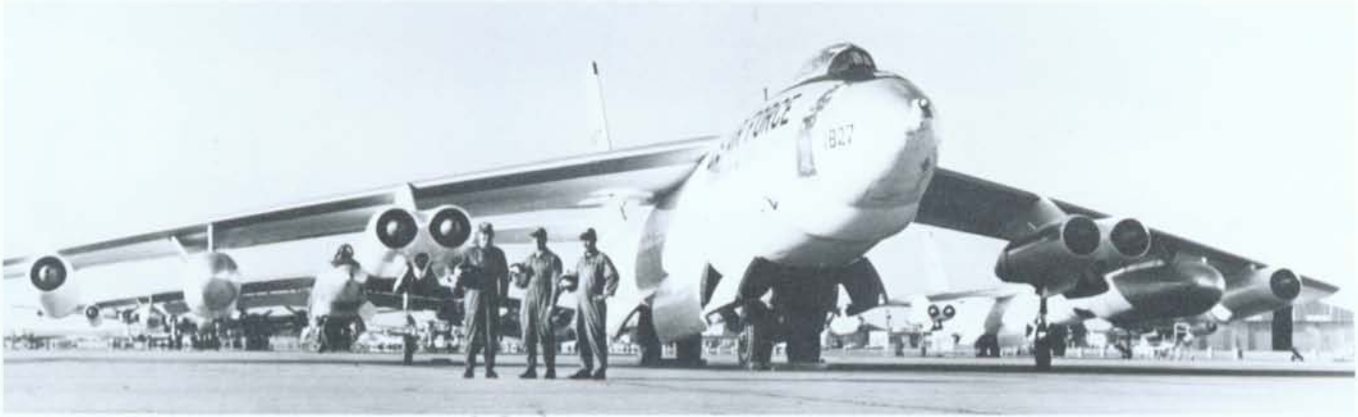
This series of six photographs shows the LABS airplane in various phases of its maneuver. R. W. "Dick" Taylor was at the controls. *(Williams collection)*

BOMB WING ASSIGNMENTS

2nd AIR FORCE

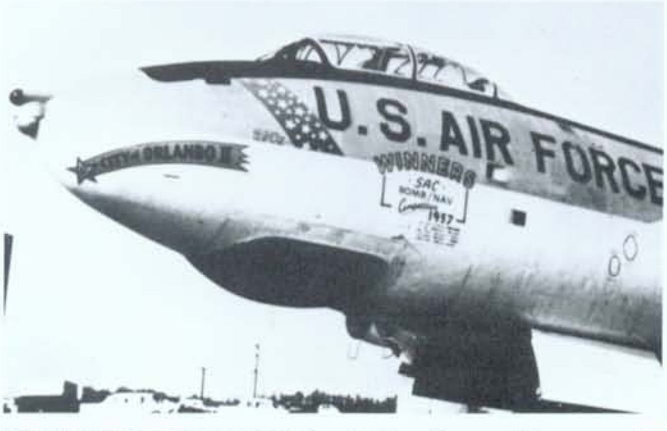
Unit		Base of Assignment	Dates of Assignment
40th BW		Forbes AFB, KS	20 Jun 60 - 1 Sep 64
	25th BS		(Deactivated)
	44th BS		
	45th BS		
	660th BS		
44th BW		Lake Charles AFB, LA	25 Apr 53 - 15 Jun 60
	66th BS	(Renamed Chennault AFB)	(Deactivated - became 44th SMW)
	67th BS		
	68th BS		
	506th BS		
68th BW		Lake Charles AFB, LA	25 Oct 53 - 15 Apr 63
	51st BS	(Renamed Chennault AFB)	(Transferred to 8th AF)
	52nd BS		
	656th BS		
	657th BS		
96th BW		Altus AFB, OK	18 Nov 53 - 3 Sep 57
	337th BS		(Transferred to 15th AF)
	338th BS		
	339th BS		
	413rd BS		
98th BW		Lincoln AFB, NE	31 Dec 58 - 25 Jun 66
	343rd BS	(Redesignated 98th SAW on	(Deactivated)
	344th BS	1 Feb 64)	
	345th BS		
	415th BS		
301st BW		Barksdale AFB, LA	20 Jun 53 - 15 Apr 58
	32nd BS		(Transferred to 8th AF)
	352nd BS		
	353rd BS		
	419th BS		
305th BW		Bunker Hill AFB, IN	Feb 61 - 1 Apr 63
	364th BS		(Converted to B-58)
	365th BS		
	366th BS		
	422nd BS		
306th BW		MacDill AFB, FL	2 Apr 51 - 1 Jan 59
	367th BS		(Deactivated - became 306th SW)
	368th BS		
	369th BS		
	423rd BS		
307th BW		Lincoln AFB, NE	31 Dec 58 - 25 Jun 65
	370th BS		(Deactivated - Transitioned
	371st BS		into KC-135)
	372nd BS		
	424th BS		
321st BW		Pinecastle AFB, FL	15 Dec 53 - 1 Jan 59
	445th BS	(Renamed McCoy AFB)	(Transferred to 8th AF)
	446th BS		
	447th BS		
	448th BS		

340th BW		Whiteman AFB, MO	31 Dec 58 - 1 Sep 63
	486th BS		(Transitioned into B-52)
	487th BS		
	488th BS		
	489th BS		
376th BW		Barksdale AFB, LA	23 Feb 54 - 14 Nov 57
	512th BS		(Transferred to 8th AF)
	513th BS		
	514th BS		
	515th BS		
379th BW		Homestead AFB, FL	1 Nov 55 - 1 Jan 59
	524th BS		(Transitioned into B-52)
	525th BS		
	526th BS		
	527th BS		
384th BW		Little Rock AFB, AR	1 Aug 55 - 2 Apr 66
	544th BS		(Deactivated)
	545th BS		
	546th BS		
	547th BS		
4347th CCTW		Wichita AFB, KS	1 Jul 58 - 15 Jun 63
	4347th TS	(Renamed McConnell AFB)	(Deactivated)
	4348th TS		
	4349th TS		
	4350th TS		

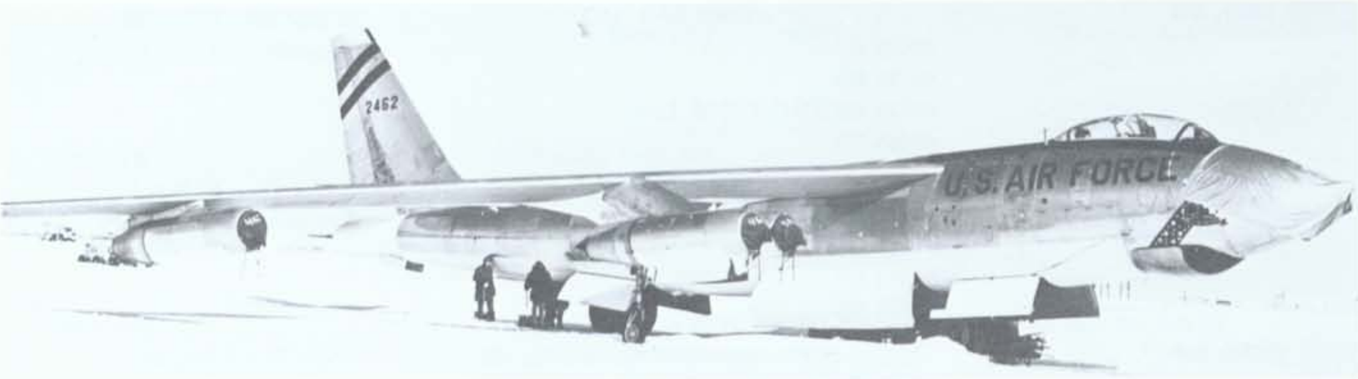


October 1960 line up of 96th BW B-47s. In the foreground is B-47E-55-LM, s/n 53-1827. It has a full white belly. Note the mirror finish on the inboard side of the No. 3 nacelle. *(USAF)*

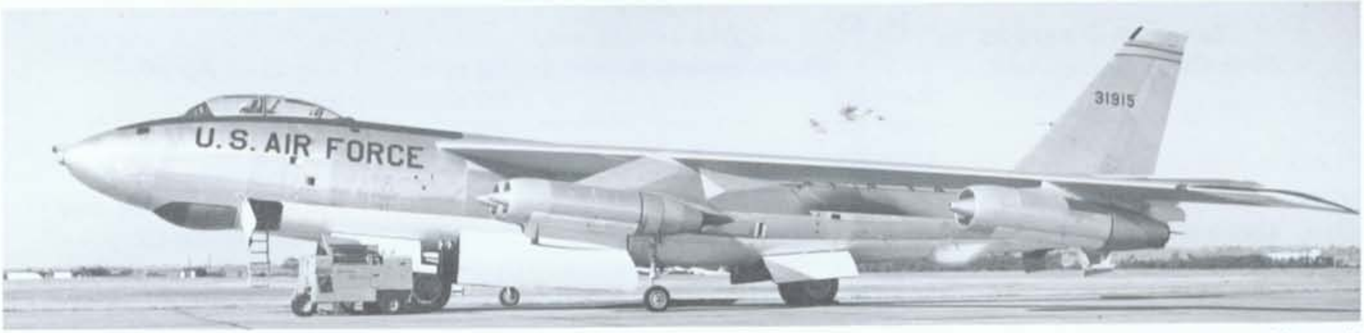
96th BW B-47E-5-DT, s/n 52-032, at the 1957 Bomb/Nav Competition at Pinecastle AFB, Florida.(USAF 158057AC)



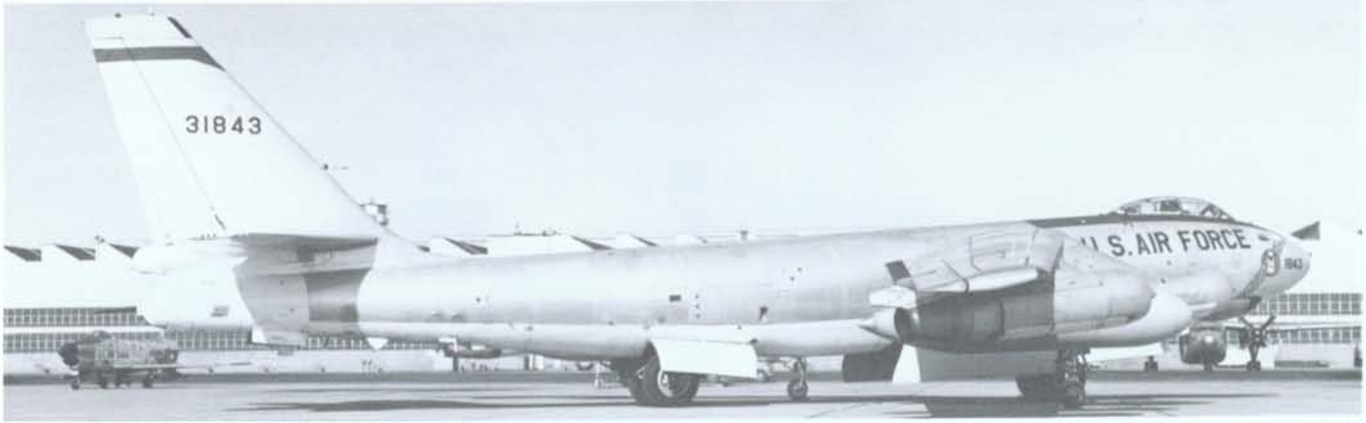
Proud winner of the 1957 Bomb/Nav Competition was the 321st BW flying the ***City of Orlando II.*** *(321st SMW)*



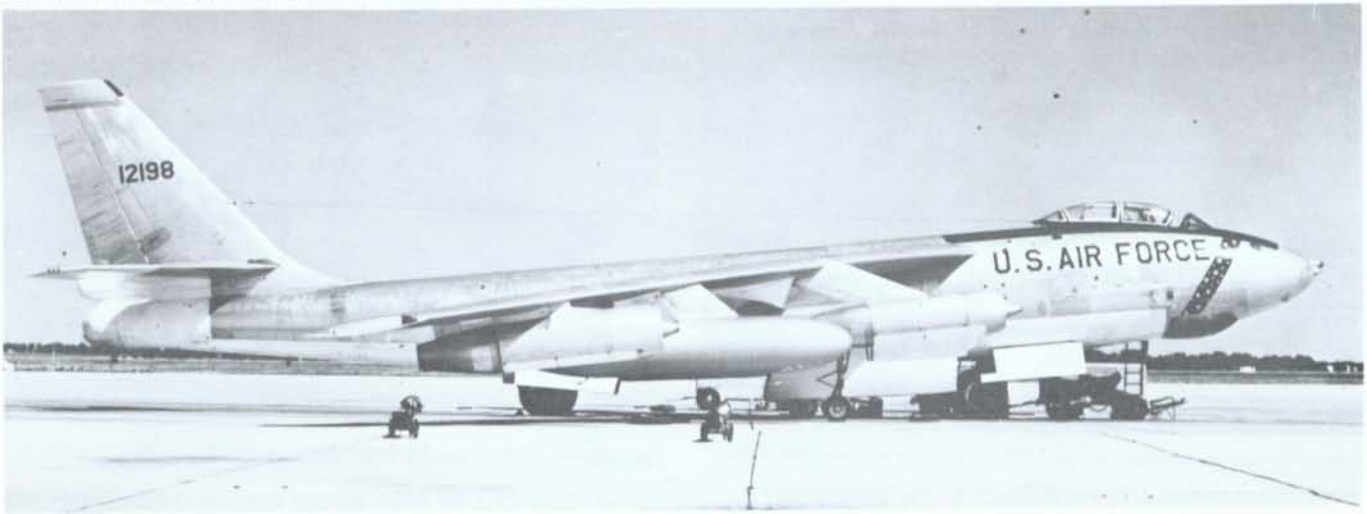
In June 1956, 52-462 was a B-47E-85-BW assigned to the 98th BW. The wing crest is partially visible beneath the nose boot. *(USAF)*



301st BW B-47E-70-LM, s/n 53-1915, with Phase III ECM package. *(Balogh via Menard)*

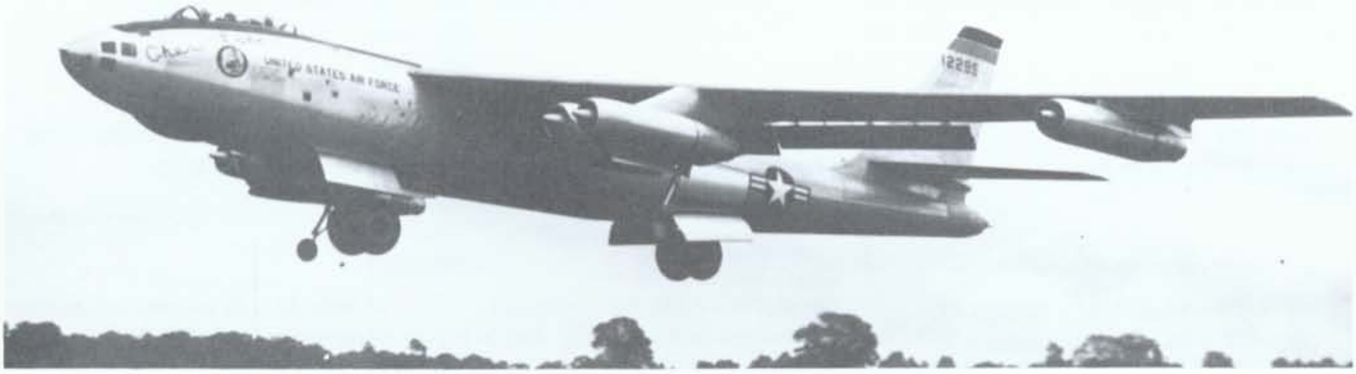


307th BW B-47E-75-LM, s/n 53-1843, with Phase II ECM. *(Stevens via Menard)*

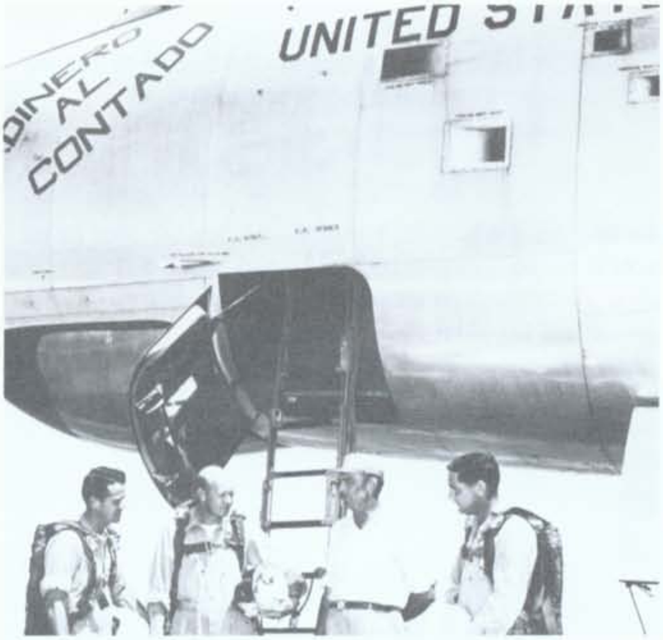


Although reassigned to the 340th BW, B-47E-40-BW, s/n 51-2198, retains the 509th BW arrow on the fin. *(USAF)*

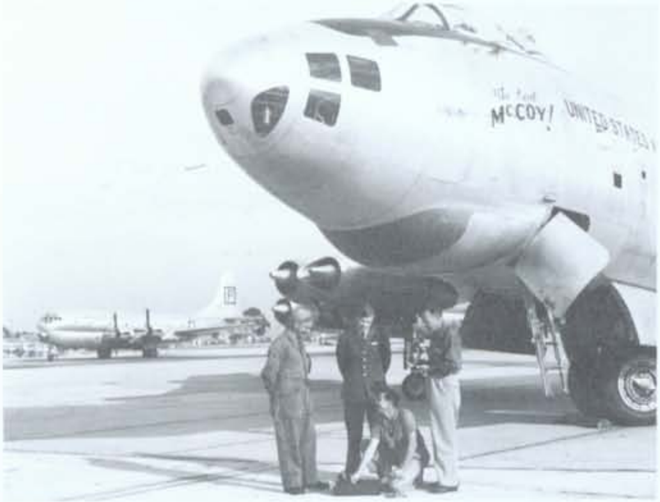
306th BOMB WING



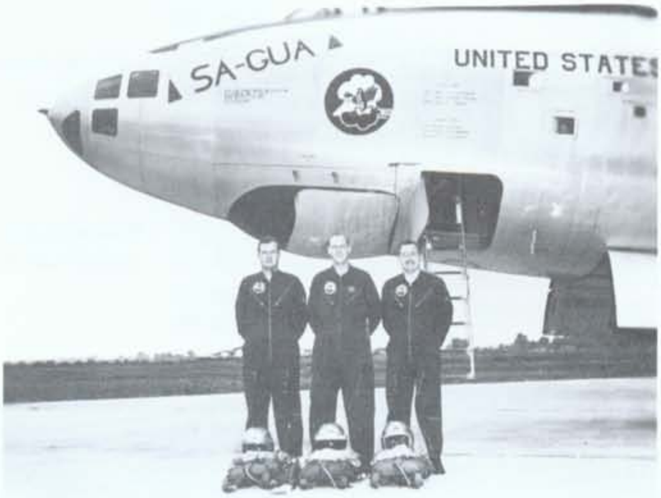
Cheri-Lynn *was B-47B-45-BW, s/n 51-2295, belonging to the 306th BW.* *(Boeing HS-920)*



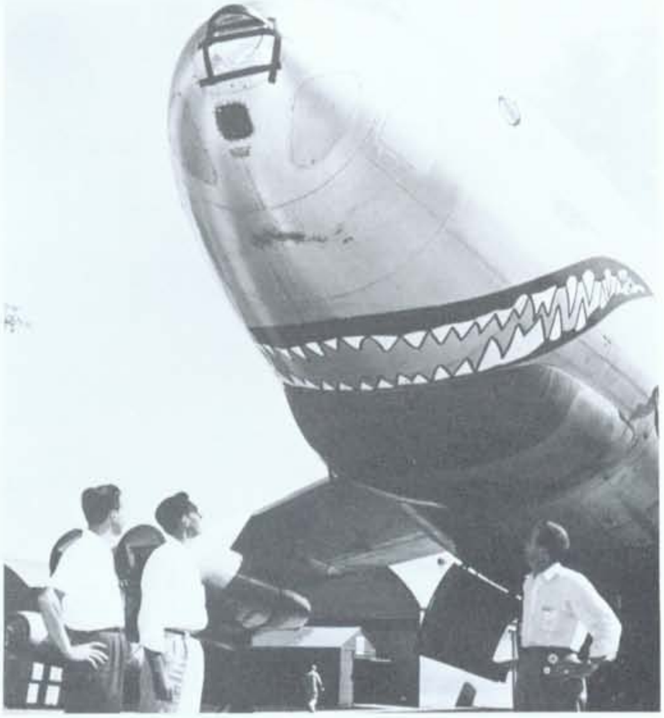
Dinero al Contado *(or money on the barrel head), B-47B-46-BW, s/n 51-2254, of the 306th BW, set a 25-hr, 19-min endurance record on June 16-17, 1952.* *(Boeing Wichita BW98050)*



The Real McCoy *was B-47B-5-BW, s/n 50-008, flown by Col. Michael N. W. McCoy, 306th BW commander.* *(Boeing P13020)*



Sa-Gua *was B-47B-46-BW, s/n 51-2291, of the 369th BS, 306th BW.* *(Johnson)*

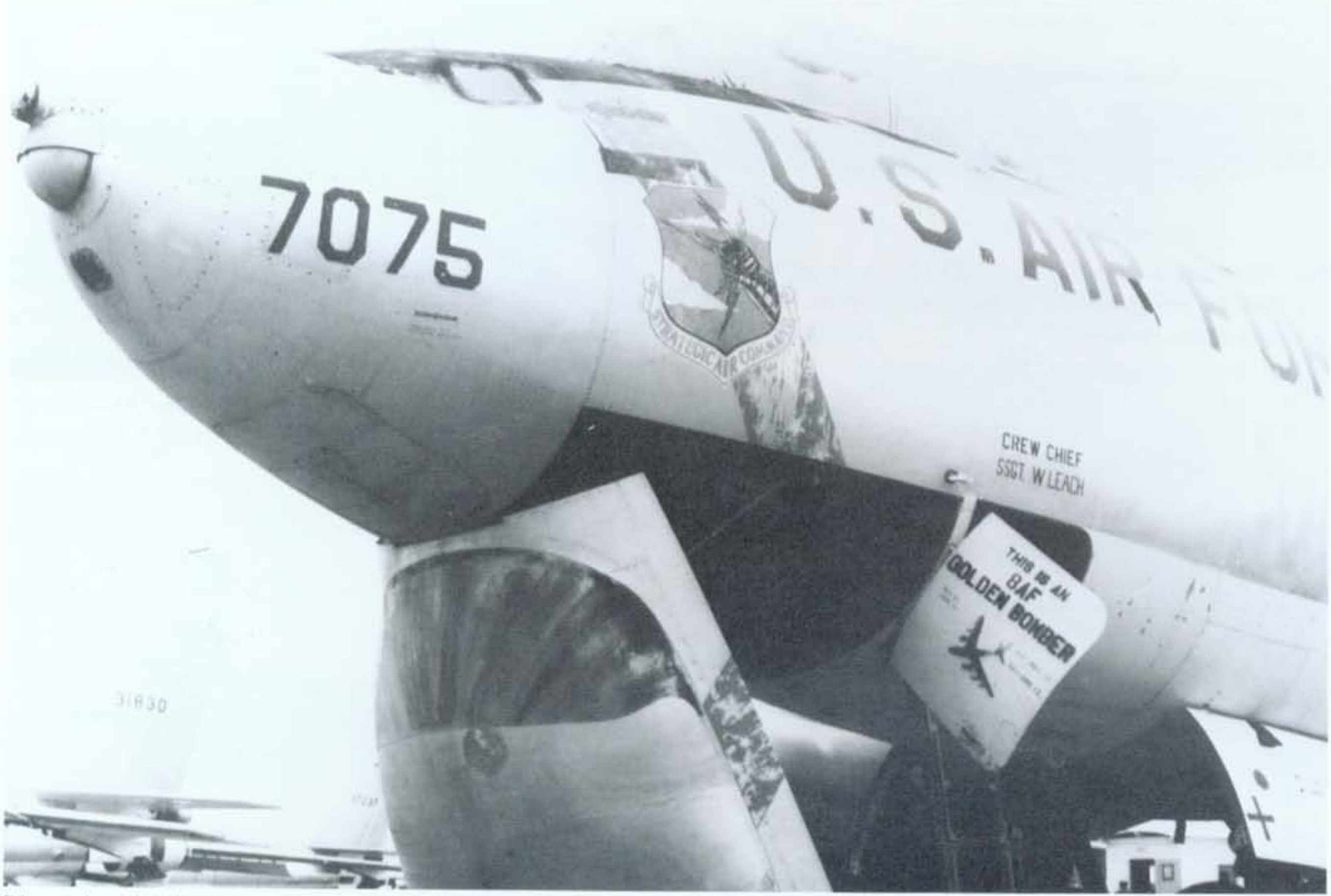


This sharkmouthed B-47B-41-BW, s/n 51-2234, was also assigned to the 306th BW. *(Boeing-Wichita BW 91972)*

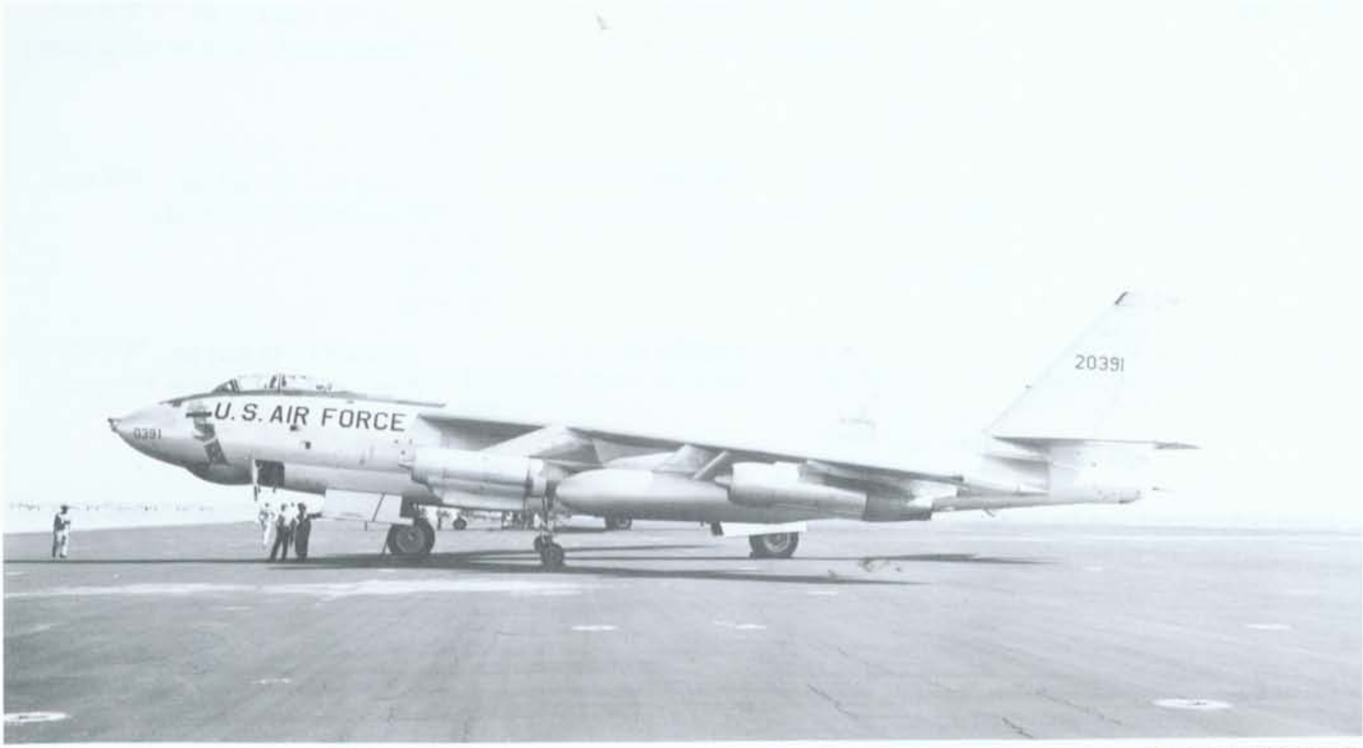
8th AIR FORCE

2nd BW	20th BS 49th BS 96th BS 429th BS	Hunter AFB, GA	25 Nov 53 - 1 Apr 63 (Transition into B-52)
19th BW	28th BS 30th BS 93rd BS 659th BS	Pinecastle AFB, FL (Transferred to Homestead AFB, FL 1 Jul 56)	11 Jun 54 - 1 Jan 61 (Transition into B-52)
40th BW	25th BS 44th BS 45th BS 660th BS	Smoky Hill AFB, KS (Renamed Schilling AFB Jan 57)	28 May 52 - 20 Jun 60 (Transferred to 15th AF)
98th BW	343rd BS 344th BS 345th BS 415th BS	Lincoln AFB, NE	15 Oct 54 - 31 Dec 58 (Transferred to 2nd AF)
100th BW	349th BS 350th BS 351st BS 418th BS	Portsmouth AFB, NH (Renamed Pease AFB in 1957)	1 Jan 56 - 25 Jun 66 (Transitioned into B-52)
301st BW	32nd BS 352nd BS 353rd BS 419th BS	Lockbourne AFB, OH	15 Apr 58 - 15 Jun 64 (Transitioned into KC-135)
305th BW	364th BS 365th BS 366th BS 422nd BS	MacDill AFB, FL	15 Apr 52 - 15 Feb 61 (Transferred to 2nd AF)
306th BW	367th BS 368th BS 369th BS 423rd BS	MacDill AFB, FL	1 Jan 59 - 1 Apr 63 (Transitioned into B-52)
307th BW	370th BS 371st BS 372nd BS 424th BS	Lincoln AFB, NE	8 Nov 54 - 31 Dec 58 (Transferred to 2nd AF)
308th BW	373rd BS 374th BS 375th BS 425th BS	Hunter AFB, GA (Transferred to Plattsburgh AFB, NY 15 Jul 59)	25 Sep 53 - 25 Jun 61 (Deactivated)
310th BW	379th BS 380th BS 381st BS 428th BS	Smoky Hill AFB, KS (Renamed Schilling AFB Jan 1957)	10 May 54 - 31 Dec 58 (Transferred to 15th AF)

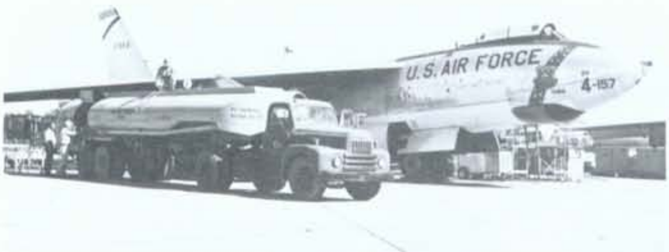
321st BW		Pinecastle AFB, FL	1 Jan 59 - 25 Oct 61
	445th BS	(Renamed McCoy AFB)	(Deactivated - became 321st SMW)
	446th BS		
	447th BS		
	448th BS		
340th BW		Whiteman AFB, MO	8 Aug 53 - 31 Dec 58
	486th BS		(Transferred to 2nd AF)
	487th BS		
	488th BS		
	489th BS		
376th BW		Lockbourne AFB, OH	15 Nov 57 - 15 Mar 65
	512th BS		(Deactivated - became 376th SW)
	513th BS		
	514th BS		
	515th BS		
380th BW		Plattsburgh AFB, NY	1 Jul 55 - 25 Jun 65
	528th BS	(Designated 380th SAW on	(Transitioned into B-52)
	529th BS	15 Sep 64)	
	530th BS		
	531st BS		
509th BW		Pease AFB, NH	1 Jul 58 - 2 Apr 66
	393rd BS		(Transitioned into B-52)
	661st BS		
	715th BS		
	830th BS		



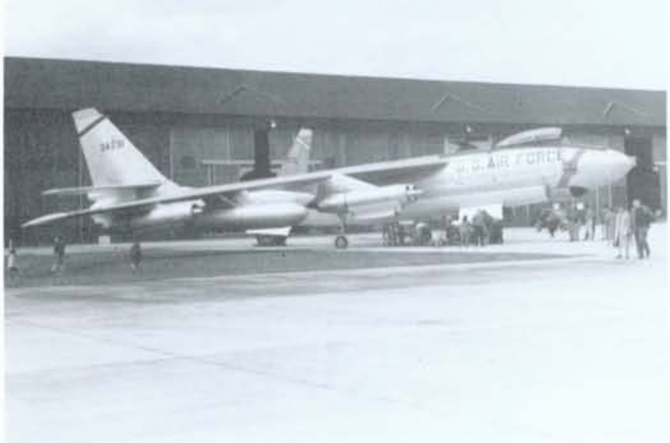
Dispatch reliability was coveted. This B-47E-II-75-BW, s/n 51-7075, was a three-time winner of the 8th AF Golden Bomber Award -- May-June 1961, April-May 1962, and May-June 1962. This aircraft was photographed at Davis-Monthan AFB in January 1968. *(USAF)*



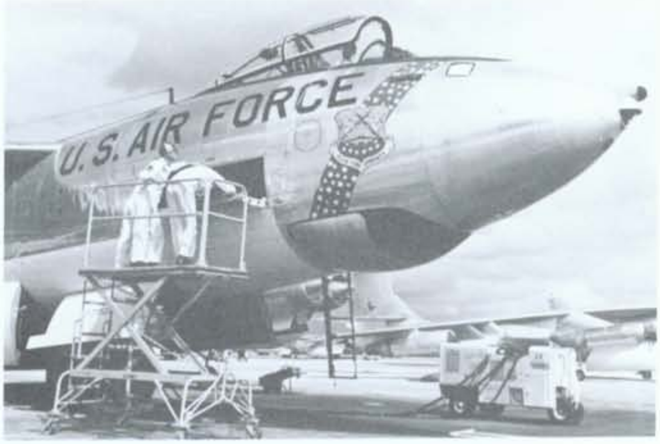
509th BW B-47E-45-LM, s/n 52-391. *(Baker via Menard)*



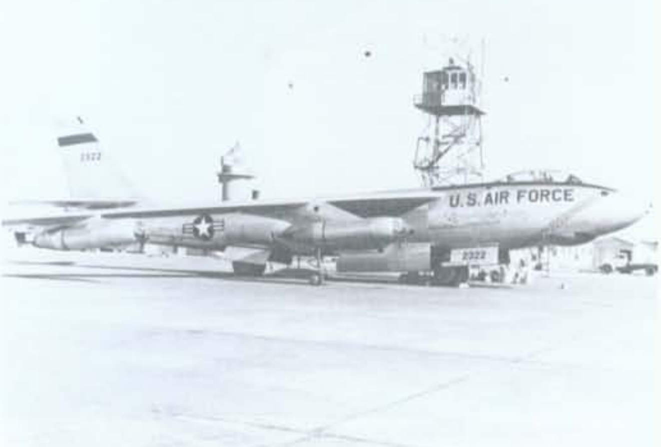
This 100th BW B-47E-75-LM, s/n 53-1964, was undergoing Big Red #4 modifications when photographed at Tulsa. Note the white canopy. *(Douglas-Tulsa)*



B-47E, 53-4231 of the 100th BW is seen at Pease AFB in May 1961. *(Burridge)*



100th BW technicians at work in the radar bay. This aircraft is equipped with a clamshell canopy. *(USAF 175085AC)*

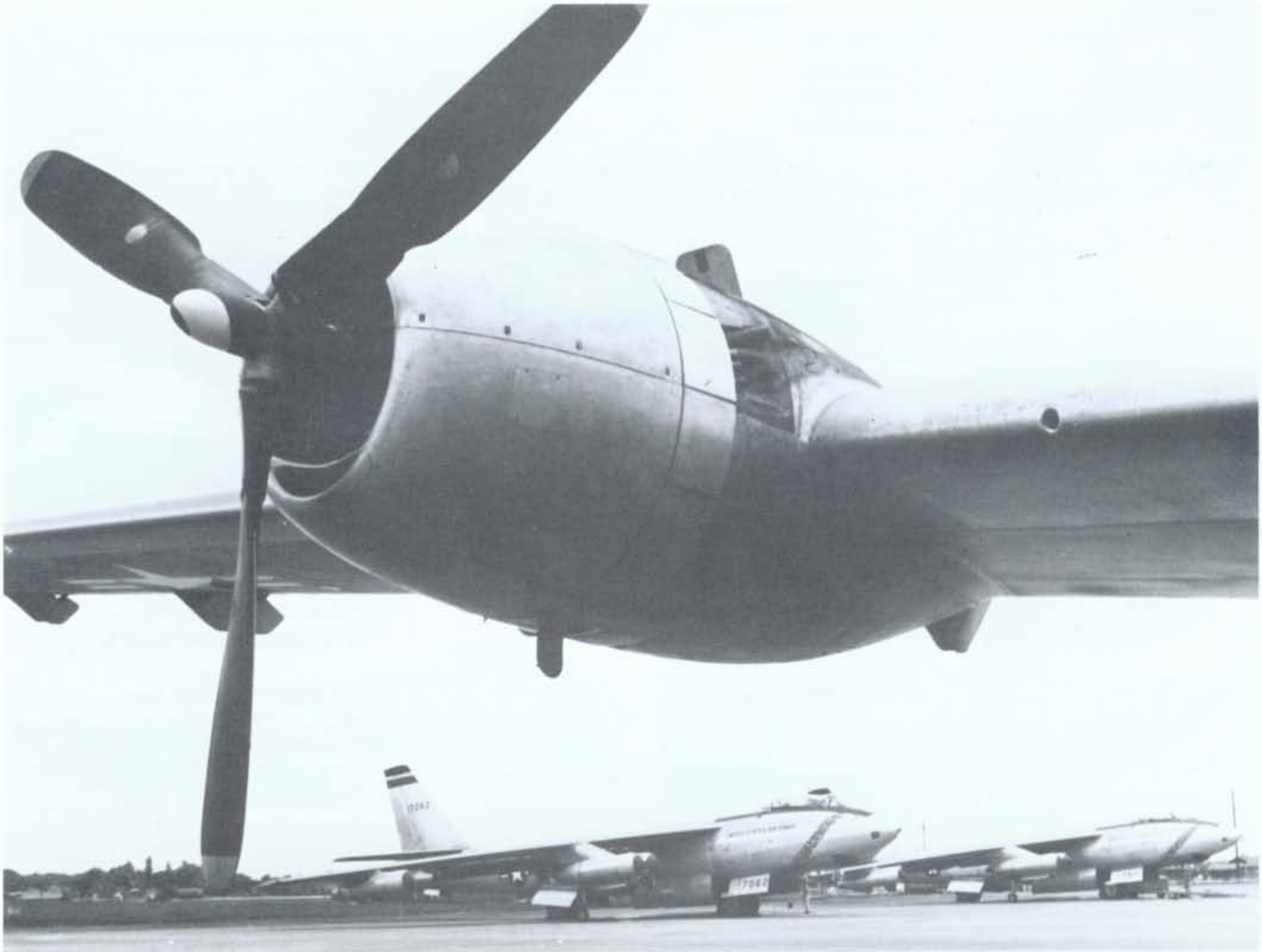


310th BW B-47E-35-BW, s/n 52-322. *(USAF)*

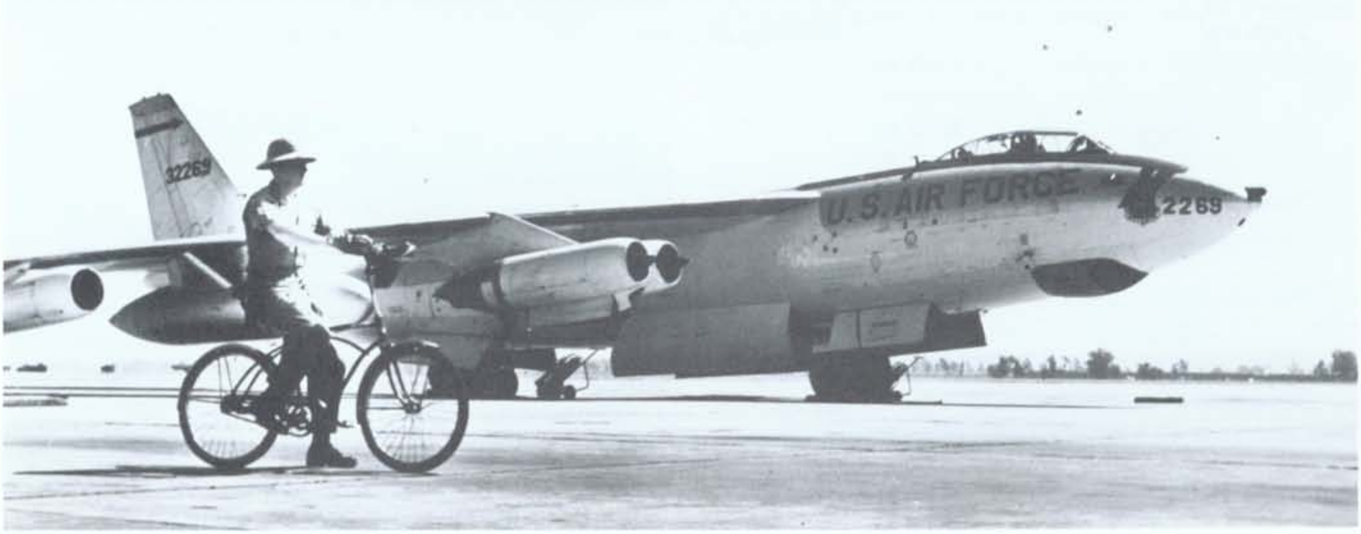
15th AIR FORCE

9th BW		Mt. Home AFB, ID	10 May 54 - 25 Jun 66
	1st BS		(Converted to SR-71)
	5th BS		
	99th BS		
	658th BS		
22nd BW		March AFB, CA	1 Nov 52 - 15 Mar 63
	2nd BS		(Transitioned into B-52)
	19th BS		
	33rd BS		
	408th BS		
40th BW		Schilling AFB, KS	Sep 54 - 20 Jun 60
	25th BS	(Transferred to Forbes, KS)	(Transferred to 2nd AF)
	44th BS		
	45th BS		
	660th BS		
43rd BW		Davis-Monthan AFB, AZ	25 Sep 53 - 15 Mar 60
	63rd BS		(Converted to B-58)
	64th BS		
	65th BS		
	408th BS		
93rd BW		Castle AFB, CA	15 Apr 54 - 1 Feb 55
	328th BS	(SAC Training Wing)	(Transitioned into B-52)
	329th BS		
	330th BS		
96th BW		Dyess AFB, TX	4 Sep 57 - 15 Mar 63
	337th BS		(Transitioned into B-52)
	338th BS		
	339th BS		
	413th BS		
97th BW		Biggs AFB, TX	1 Apr 55 - 1 Oct 59
	340th BS		(Transitioned into B-52)
	341st BS		
	342nd BS		
303rd BW		Davis-Monthan AFB, AZ	20 Jan 53 - 15 Jun 64
	358th BS		(Deactivated)
	359th BS		
	360th BS		
	427th BS		
310th BW		Schilling AFB, KS	31 Dec 58 - 25 Feb 65
	379th BS		
	380th BS		
	381st BS		
	428th BS		
320th BW		March AFB, CA	23 Jul 53 - 15 Sep 60
			(Transitioned into B-52)
	441st BS		
	442nd BS		
	443rd BS		
	444th BS		
341st BW		Dyess AFB, TX	1 Sep 55 - 25 Jun 61
	10th BS		(Deactivated - became 341st SMW)
	12th BS		
	440th BS		
	491st BS		

509th BW		Walker AFB, NM	1 Jul 55 - 30 Jun 58
	343rd BS		(Transferred to 8th AF)
	661st BS		
	715th BS		
	830th BS		



22nd BW B-47E-70-BW, and -75-BW, after completing a non-stop 6700-mile flight from March AFB, CA, to Yokota AB, Japan. *(USAF 152037AC)*



Another 22nd BW Stratojet, 53-2269, was a B-47E-110-BW, with a full white underside. *(15th AF)*

PRODUCTION BLOCKS & SERIALS

BLOCK	SERIALS
XB-47-BO	46-065/46-066
B-47A-BW	49-1900/49-1909
B-47B-1-BW	49-2642/49-2645
B-47B-5-BW	49-2646
B-47B-5-BW	50-001/50-012
B-47B-10-BW	50-013/50-025
B-47B-15-BW	50-026/50-050
B-47B-20-BW	50-051/50-082
B-47B-25-BW	51-2045/51-2081
B-47B-30-BW	51-2082/51-2136
B-47B-35-BW	51-2137/51-2191*
B-47B-40-BW	51-2192/51-2246**
B-47B-45-BW	51-2247/51-2301
B-47B-50-BW	51-2302/51-2356
B-47E-55-BW	51-2357/51-2411
B-47E-60-BW	51-2412/51-2445
B-47E-60-BW	51-5214/51-5234
B-47E-65-BW	51-5235/51-5257
B-47E-65-BW	51-7019/51-7050
B-47E-70-BW	51-7051/51-7064
B-47E-75-BW	51-7065/51-7083
B-47E-5-LM	51-15804/51-15810
B-47E-10-LM	51-15811/51-15812
B-47E-75-BW	51-17368/51-17386

BLOCKS	SERIALS
B-47E-1-DT	52-019/52-028
B-47E-5-DT	52-029/52-041
B-47E-10-DT	52-042/52-058
B-47E-15-DT	52-059/52-081
B-47E-20-DT	52-082/52-111
B-47E-25-DT	52-112/52-120
B-47E-25-DT	52-146/52-176
B-47E-30-DT	52-177/52-201
B-47E-10-LM	52-202/52-207
B-47E-15-LM	52-208/52-220
B-47E-20-LM	52-221/52-235
B-47E-25-LM	52-236/52-260
B-47E-30-LM	52-261/52-292
B-47E-35-LM	52-293/52-330
B-47E-40-LM	52-331/52-361
B-47E-45-LM	52-362/52-393
B-47E-80-BW	52-394/52-431
B-47E-85-BW	52-432/52-469
B-47E-90-BW	52-470/52-507
B-47E-95-BW	52-508/52-545
B-47E-100-BW	52-546/52-583
B-47E-105-BW	52-584/52-620
B-47E-35-DT	52-1406/52-1417
B-47E-50-LM	52-3343/52-3373

BLOCKS	SERIALS
B-47E-55-LM	53-1819/53-1849
B-47E-60-LM	53-1850/53-1880
B-47E-65-LM	53-1881/53-1911
B-47E-70-LM	53-1912/53-1942
B-47E-75-LM	53-1943/53-1972
B-47E-80-LM	53-1973/53-2027
B-47E-35-DT	53-2028/53-2040
B-47E-40-DT	53-2090/53-2103
B-47E-45-DT	53-2104/53-2117
B-47E-50-DT	53-2118/53-2131
B-47E-55-DT	53-2132/53-2144
B-47E-60-DT	53-2145/53-2157
B-47E-65-DT	53-2158/53-2170
B-47E-110-BW	53-2261/53-2296
B-47E-115-BW	53-2297/53-2331
B-47E-120-BW	53-2332/53-2367
B-47E-125-BW	53-2368/53-2402
B-47E-130-BW	53-2403/53-2417
B-47E-130-BW	53-4207/53-4244
B-47E-135-BW	53-6193/53-6244

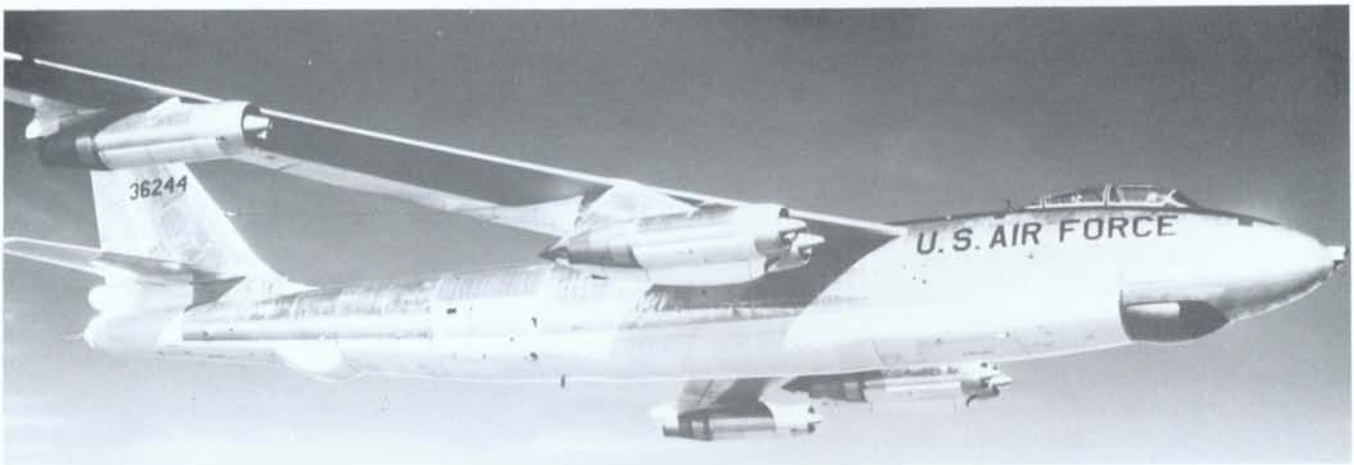
B-47 PRODUCTION SUMMARY

TYPE	NO. BUILT	PLANT
XB-47-BO	2	Boeing-Seattle
B-47A-BW	10	Boeing-Wichita
B-47B-BW	399	Boeing-Wichita
B-47E-BW	931	Boeing-Wichita
B-47E-DT	274	Douglas-Tulsa
B-47E-LM	386	Lockheed-Marietta
	2,102 TOTAL***	

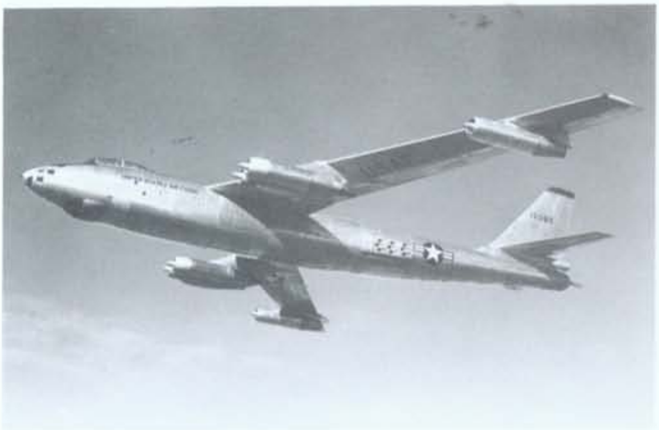
***282 additional RB-47s were produced at the Boeing-Wichita plant.

*Ten were built at Douglas-Tulsa using Boeing-Wichita fabricated parts: 51-2141, 51-2150, 51-2155, 51-2160, 51-2165, 51-2170, 51-2175, 51-2180, 51-2185, and 51-2190.

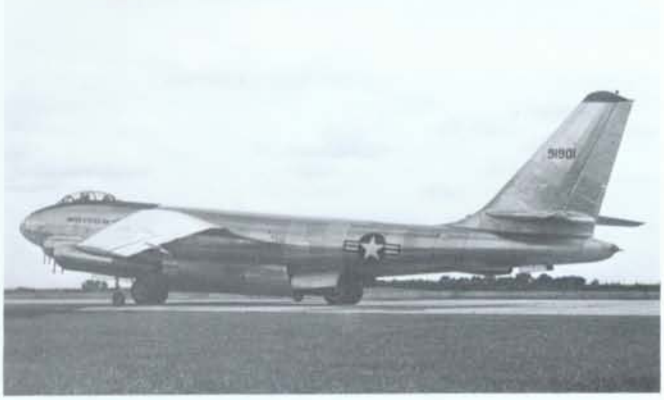
**Eight were built by Lockheed-Marietta using Boeing-Wichita fabricated parts: 51-2197, 51-2204, 51-2210, 51-2217, 51-2224, 51-2231, 51-2237, and 51-2243.



Right side view of B-47E-135-BW, s/n 53-6244, with a partial white finish and Phase III ECM gear.(Cusick via Williams)



B-47B-55-BW, s/n 51-2363, still with the internal RATO, had the 20 mm A-5 fire control system installed. External fuel tanks were to come later in the program.
(Boeing BW65589)



The second B-47A-BW reveals the proximity of the long bomb bay doors to the aft main landing gear. The drag chute compartment is open. A .50 caliber tail gun with integral radar had been installed when this May 1951 photograph was taken. *(via Williams)*

MODELER'S SECTION

PRODUCT REVIEW POLICY. In each of our publications we will try to review kits and decals that are available to the scale modeler. We hope to be able to review every currently available kit that is useable by the scale modeler. Kits produced in the past that are no longer generally available, and those more intended to be toys than accurate scale models will not usually be covered. Additionally, we do not intend to give a complete step-by-step, correction-by-correction account of how to build each kit. Instead we intend to give a brief description of what is available to the modeler, and point out some of the good and not-so-good points of each kit or product. In this way we hope to give an overall picture of what the modeler has readily available for his use in building the particular aircraft involved.

KIT REVIEWS

OFF SCALE KITS

AURORA B-47, KIT NUMBER 493

First issued in 1956 and costing seventy cents, this is the smallest of the three major kits of the Stratojet. Measurements of the wingspan scale out to 1/183rd scale, while the length works out to 1/179th scale. Molded in silver plastic, the kit is quite simple with a minimum of details and raised surface scribing. A landing gear is present, but it is very crude, lacks detail, and there are no gear wells. In our estimation, it would be better to build the model on the stand provided in an in-flight configuration. However, this would involve cutting off the gear doors on the inboard engine nacelles and replacing them with a fairing that would represent the doors in the closed position. This could be easily accomplished with plastic stock and putty.

The canopy is a one-piece clear part with no framing indicated. There are no cockpits or pilots. No defensive armament is present, but the long style bomb bay doors are scribed in the plastic. Decals include a pair of **0117**s for the tail, two **UNITED STATES AIR FORCE**s for the nose, and four national insignia, all being the same size. There is also a decal for the clear display stand. However, there are no **USAF** markings for the wings, and no unit markings. Today, this model is thirty years old, and its value is more as a collector's item than as a scale model.

Review by Bert Kinzey

BOEING
B47
STRATOJET
AURORA
SCALE MODEL PLASTIC ASSEMBLY KIT

The Aurora B-47 kit dates back to 1956. It is not very accurate, is rather small, and is not in a "standard" scale. It has more value to kit collectors than to the serious scale modeler.

REVELL 1/113.6th SCALE B-47B, KIT NUMBER H-140

Also dating back to 1956, this kit is now hard to find, and should primarily be considered a collector's item. As originally issued, it had Revell's popular swivel or "Revelling" three-piece stand which was molded in clear plastic. Later releases had a two-piece silver stand. In any event the stand was required since the model had no landing gear.

With a wingspan of just over twelve inches, the kit works out to an odd fit-in-the-box 1/113.6th scale. There isn't much in the way of detail, but the outline of this simple, straight-forward kit is quite accurate. It represents a B-47B-15-BW, s/n 50-043, and includes an internal RATO, a glass nose, and no tail armament. There are twenty-five silver parts and six clear parts (counting the swivel stand).

Nostalgia buffs who remember building this kit in the '50s may enjoy building it again. Adding a scratch-built landing gear may prove challenging, and the final results may be very rewarding. Unfortunately, the model will be too large for a 1/144th scale collection, and too small for a 1/100th scale collection.

The old Revell B-47 is now a hard kit to find. It was in 1/113.6th scale.

1/72nd SCALE KIT

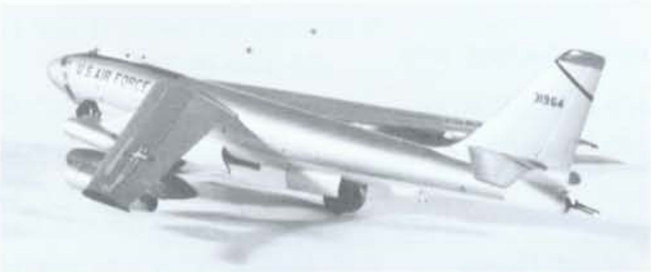
HASEGAWA KIT NUMBER JS-23 AND MINICRAFT KIT NUMBER 1223

Easily the best of all B-47 kits, the Hasegawa offering is truly excellent. The Minicraft release differs only in box art and decals.

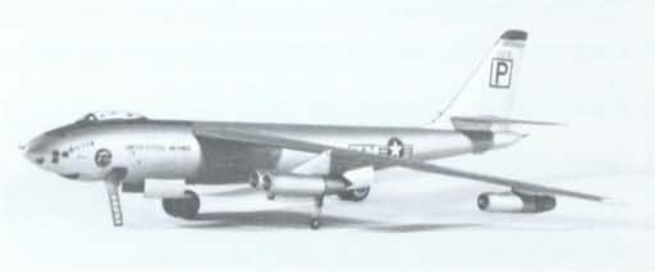
One clear piece and 165 silver parts make up this extremely accurate kit. As molded, it represents a B-47E with drop tanks, short bomb bay with twenty-four bombs, 20mm cannons, chute doors, landing gear, crew entry hatch with crew ladder, AN/ARC-21 antenna mast bomb sight periscope, and nose radar warning antenna. Although it contains the AN/ARC-21 antenna mast, the aft fuselage depicts a Phase I ECM antenna system. The modeler may wish to add the Phase II ECM wafer antennas to the waist. With additional effort, the large Phase III ECM belly antenna may be built from scratch. Extended wing tips for the Phase III system may be built out of sheet plastic and then installed after removing the existing wing tips. Care must be taken in aligning the wings so that the main and outrigger wheels all rest on the same plane.

The markings in the Hasegawa kit are for B-47E-25-DT, s/n 52-0154, of the 301st BW, with a partial white underside. The kit instructions call for the entire lower surface of the horizontal tail to be painted white. This is in error.

In the Minicraft release, markings are provided for the colorful Air Weather Service WB-47B-30-BW, s/n 51-2115.


This Hasegawa model was built with Phase III ECM.

Col. Marvin Howell's second place winner at a recent IPMS National Convention was this Hasegawa B-47E.


Hasegawa kit built as B-47B ***Sa Gua*** *of the 306th BG.*

Tee Town pods have been added to this Hasegawa B-47.

DECALS

Note: As of press time for this kit, no after-market decals had been released for B-47 kits. For the adventuresome modeler, other decal sources are listed below. With some adaptation, these may be applied to the 1/72nd scale B-47 kit.

BOMB WING	SOURCE
9th BW	Microscale sheet 48-239 for the SR-71 *
93rd BW	Nova KC-135 kit
96th BW	Monogram 1/72nd scale B-1 kit
98th BW	Microscale sheet 72-356 for the B-29
301st BW	Hasegawa kit number JS-23
379th BW	Revell B-24 kit number H-203 and Microscale U.S. Bombers WW-II sheet number 72-281
SAC Crest	Microscale B-52 sheet number 72-152

* The 1/48th scale size for the SR-71 is about right for a 1/72nd scale B-47.

REFERENCE LISTING

1. Anderton, D. A., The History of the U.S. Air Force, Crescent, New York, 1981
2. Boeing B-47 Stratojet, Air Age, New York, 1956
3. Boyne, W. J., Boeing B-52-A Documentary History, Janes, London, England, 1981
4. Boyne, W. J. and D. S. Lopez, The Jet Age - Forty Years of Jet Aviation, National Air and Space Museum, Washington D. C., 1979
5. Bowers, P. M., Boeing Aircraft Since 1916, Putnam, London, England, 1966
6. Bowers, P. M., The Boeing B-47, Profile Number 83, Surrey, England, 1966
7. Drendel L., and T. Y. Blood, B-47 Stratojet in Action, Squadron/Signal Publication, Carrollton, Texas, 1976
8. Fahey, J. C. USAF Aircraft 1947-1956, Falls Church, Virginia, 1956
9. Francillion, R. J., Lockheed Aircraft Since 1913, Putnam, London, England, 1982
10. Francillion, R. J., McDonnell-Douglas Aircraft Since 1920, Putnam, London, England, 1979
11. Green W. and R. Cross, The Jet Aircraft of the World, Garden City, New York, 1957
12. Hopkins, J. C., The Development of the Strategic Air Command, 1946-1981 (A Chronological History), Office of the Historian, HQ/SAC, Offutt AFB, NE, 1982
13. Hubler, R. J., SAC, The First Complete History of SAC, Duell, Sloan, & Pearce, New York, 1958
14. Jones, L. S., U.S. Bombers B-1 - B-70, Aero, Fallbrook, California, 1962
15. Jones, L. S., U.S. Bombers - Army and Air Force, 1929 - 1980, Aero, Fallbrook, California, 1980
16. Mansfield, H., Vision - The Story of Boeing, Popular Library, New York, 1966
17. Seven Decades of Progress, A History of Turbine Technology (story of General Electric), Aero, Fallbrook, California, 1979
18. The Development of the Strategic Air Command 1946 - 1981, Office of the Historian, HQ/SAC, Offutt AFB, NE, 1981

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